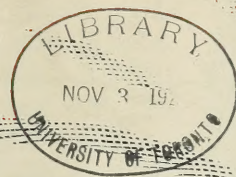


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—  
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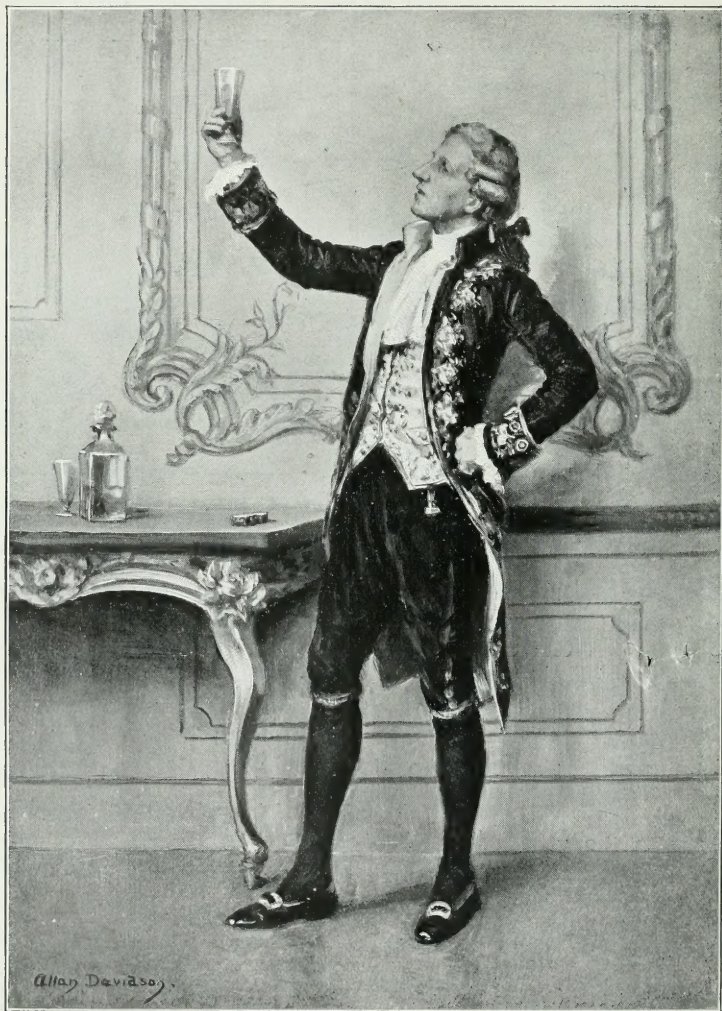
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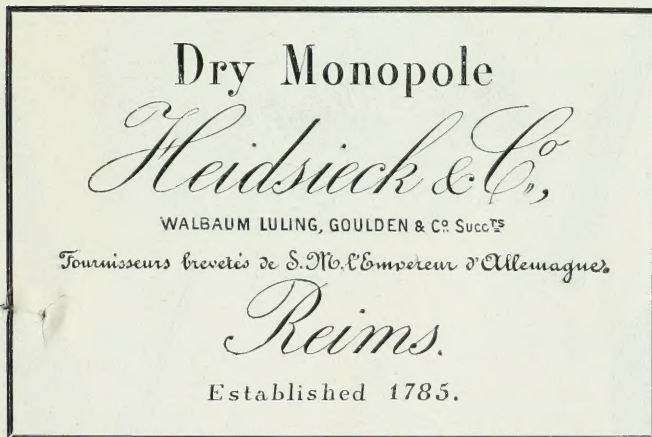


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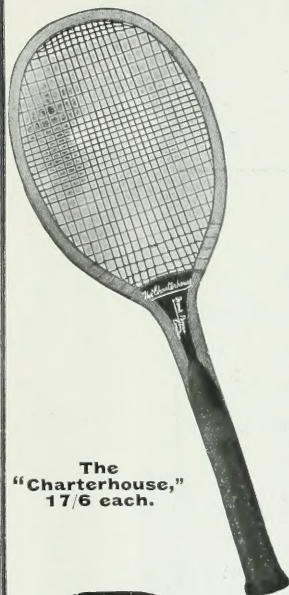
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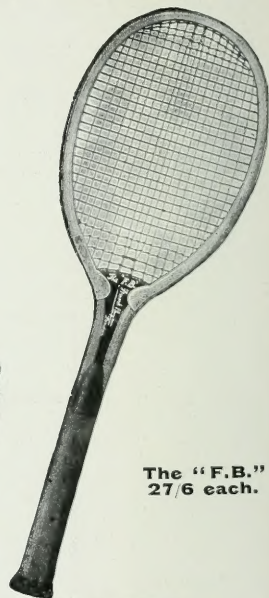
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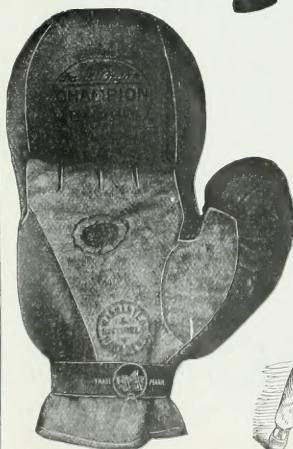
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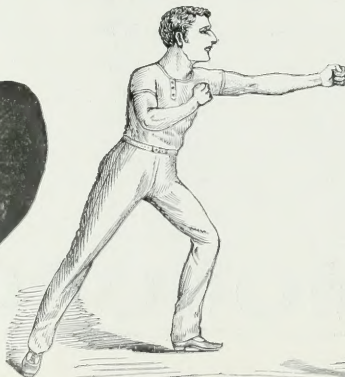
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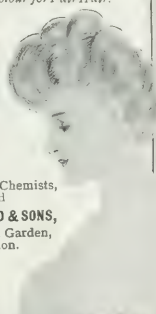
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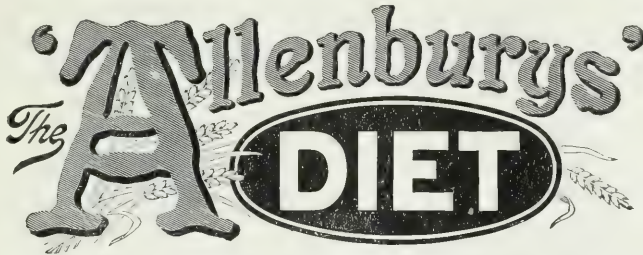
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**JULY 17th to 24th, 1909.**

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Sister ships: *Africa, Britannia, Hibernia, New Zealand, Hindustan, Dominion, Commonwealth.*

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Sister ships: *Téméraire, Superb.*

#### TÉMÉRAIRE. Battleship. Launched 1907.

Displacement, 18,600 tons; I.H.P., 23,000; Speed, 21 knots; Armament, ten 12-in., twenty 4-in.; five submerged torpedo tubes; coal capacity, 900-2,700 tons, also oil.

Sister ships: *Bellerophon, Superb.*

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Displacement, 16,500 tons; I.H.P., 16,750; Speed, 18 knots; Armament, four 12-in., ten 9·2-in., fifteen 12-pr., twenty-three 3-pr.; five submerged torpedo tubes; coal capacity, 900-2,500 tons, also oil.

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Sister ships: *Queen, London, Venerable, Prince of Wales, Irresistible, Implacable, Formidable.*

### THAMES HAVEN.

#### BRITANNIA. Battleship. Launched 1903.

Displacement, 16,350 tons; I.H.P., 18,000; Speed, 18·5 knots; Armament, four 12-in., four 9·2-in., ten 6-in., fourteen 3-pr.; four submerged torpedo tubes; coal capacity, 950-2,000 and 400 tons oil. Crew, 777.

Sister ships: *Africa, Hibernia, New Zealand, Hindustan, Dominion, Commonwealth, King Edward VII.*

### LOWER HOPE REACH.

#### HINDUSTAN. Battleship. Launched 1903.

Displacement, 16,350 tons; I.H.P., 18,000; Speed, 18·5 knots; Armament, four 12-in., four 9·2-in., ten 6-in., fourteen 3-pr.; four submerged torpedo tubes; coal capacity, 950-2,000; and 400 tons oil. Crew, 777.

Sister ships: *Africa, Britannia, Hibernia, New Zealand, Dominion, Commonwealth, King Edward VII.*

#### DOMINION. Battleship. Launched 1903.

Displacement, 16,350 tons; I.H.P., 18,000; Speed, 18·5 knots; Armament, four 12-in., four 9·2-in., ten 6-in., fourteen 3-pr.; four submerged torpedo tubes; coal capacity, 950-2,000; and 400 tons oil. Crew, 777.

Sister ships: *Africa, Britannia, Hibernia, New Zealand, Hindustan, Commonwealth, King Edward VII.*

#### HIBERNIA. Battleship. Launched 1903.

Displacement, 16,350 tons; I.H.P., 18,000; Speed, 18·5 knots; Armament, four 12-in., four 9·2-in., ten 6-in., fourteen 3-pr.; four submerged torpedo tubes; coal capacity, 950-2,000; and 400 tons oil. Crew, 777.

Sister ships: *Africa, Britannia, New Zealand, Hindustan, Dominion, Commonwealth, King Edward VII.*

#### NEW ZEALAND. Battleship. Launched 1903.

Displacement, 16,350 tons; I.H.P., 18,000; Speed, 18·5 knots; Armament, four 12-in., four 9·2-in., ten 6-in., fourteen 3-pr.; four submerged torpedo tubes; coal capacity, 950-2,000; and 400 tons oil. Crew, 777.

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Sister ships: *Africa, Britannia, Hibernia, New Zealand, Hindustan, Dominion, King Edward VII.*

#### AFRICA. Battleship. Launched 1903.

Displacement, 16,350 tons; I.H.P., 18,000; Speed, 18·5 knots; Armament, four 12-in., four 9·2-in., ten 6-in., fourteen 3-pr.; four submerged torpedo tubes; coal capacity, 950-2,000; and 400 tons oil. Crew, 777.

Sister ships: *Britannia, Hibernia, New Zealand, Hindustan, Dominion, Commonwealth, King Edward VII.*



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Displacement, 14,000 tons; L.H.P., 18,000; Speed, 19 knots;  
 Armament, four 12-in., twelve 6-in., twelve 12-pr., six 3-pr.,  
 four submerged torpedo tubes; coal capacity, 900-2,000 tons.  
 Crew, 750.

Sister ships: *Duncan, Cornwallis, Exmouth, Albatross*.

**DRAKE.** Armoured Cruiser. Launched 1901.

Displacement, 14,100 tons; L.H.P., 30,000; Speed, 23 knots;  
 Armament, two 9.2-in., sixteen 6-in., fourteen 12-pr., three  
 3-pr.; two submerged torpedo tubes; coal capacity, 1,250-  
 2,500 tons. Crew, 900.

Sister ships: *King Alfred, Terrible, Good Hope*.

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Sister ships: *Irresistible, Inflexible*.

**INFLEXIBLE.** Armoured Cruiser. Launched 1907.

Displacement, 17,250 tons; L.H.P., 41,000; Speed, 25 knots;

Armament, eight 12-in., sixteen 4-in.; three submerged  
 torpedo tubes; coal capacity, 1,000 tons.

Sister ships: *Invincible, Indomitable*.

**STONEHENGE.****INVINCIBLE.** Armoured Cruiser. Launched 1907.

Displacement, 17,250 tons; L.H.P., 41,000; Speed, 25 knots;  
 Armament, eight 12-in., sixteen 4-in.; three submerged  
 torpedo tubes; coal capacity, 1,000 tons.

Sister ships: *Indomitable, Inflexible*.

**LONG REACH.****SHANNON.** Armoured Cruiser. Launched 1906.

Displacement, 14,600 tons; L.H.P., 27,000; Speed, 23 knots;  
 Armament, four 9.2-in., ten 7.5-in., eighteen 12-pr.; five  
 submerged torpedo tubes; coal capacity, 950-1,235 tons; and  
 602 tons of oil. Crew, 755.

Sister ships: *Minotaur, Python*.

**WARRIOR.** Armoured Cruiser. Launched 1905.

Displacement, 13,660 tons; L.H.P., 23,641; Speed, 23.3 knots;  
 Armament, six 9.2-in., four 7.5-in., two 12-pr., twenty-four  
 3-pr.; three submerged torpedo tubes; coal capacity, 1,000-  
 2,000 tons; and 700 tons oil. Crew, 704.

Sister ships: *Achilles, Cockburn, Natal*.

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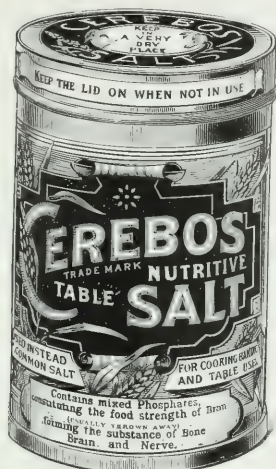


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Displacement, 14,600 tons; I.H.P., 27,000; Speed, 23 knots; Armament, four 9'2-in., ten 7'5-in., eighteen 12-pr.; five submerged torpedo tubes; coal capacity, 950-1,235 tons; and 692 tons oil. Crew, 755.

Sister ships: *Minotaur*, *Shannon*.

**PURFLEET.****COCHRANE.** Armoured Cruiser. Launched 1905.

Displacement, 13,660 tons; I.H.P., 23,654; Speed, 23'29 knots; Armament, six 9'2-in., four 7'5-in., two 12-pr., twenty-four 3-pr.; three submerged torpedo tubes; coal capacity, 1,000-2,000 tons; and 700 tons oil. Crew, 704.

Sister ships: *Achilles*, *Natal*, *Warrior*.

**NATAL.** Armoured Cruiser. Launched 1905.

Displacement, 13,660 tons; I.H.P., 23,592; Speed, 23'33 knots; Armament, six 9'2-in., four 7'5-in., two 12-pr., twenty-four 3-pr.; three submerged torpedo tubes; coal capacity, 1,000-2,000 tons; and 700 tons oil. Crew, 704.

Sister ships: *Achilles*, *Cochrane*, *Warrior*.

**ERITH REACH.****GOOD HOPE.** Armoured Cruiser. Launched 1901.

Displacement, 14,100 tons; I.H.P., 30,000; Speed, 23 knots; Armament, two 9'2-in., sixteen 6-in., fourteen 12-pr., three 3-pr.; two submerged torpedo tubes; coal capacity, 1,250-2,500 tons. Crew, 900.

Sister ships: *King Alfred*, *Leviathan*, *Drake*.

**DUKE OF EDINBURGH.** Armoured Cruiser.

Launched 1904.

Displacement, 13,660 tons; I.H.P., 23,685; Speed, 22'84 knots; Armament, six 9'2-in., ten 6-in., twenty 3-pr.; three submerged torpedo tubes; coal capacity, 1,000-2,000 tons; and 700 tons oil. Crew, 704.

Sister ship: *Black Prince*.

**ARGYLL.** Armoured Cruiser. Launched 1904.

Displacement, 10,850 tons; I.H.P., 21,442; Speed, 22'97 knots; Armament, four 7'5-in., six 6-in., two 12-pr., seventeen 3-pr., eight 1-pr.; two submerged torpedo tubes; coal capacity, 800-1,800 tons. Crew, 655.

Sister ships: *Devonshire*, *Hamshire*, *Roxburgh*, *Antrim*, *Cannareon*.

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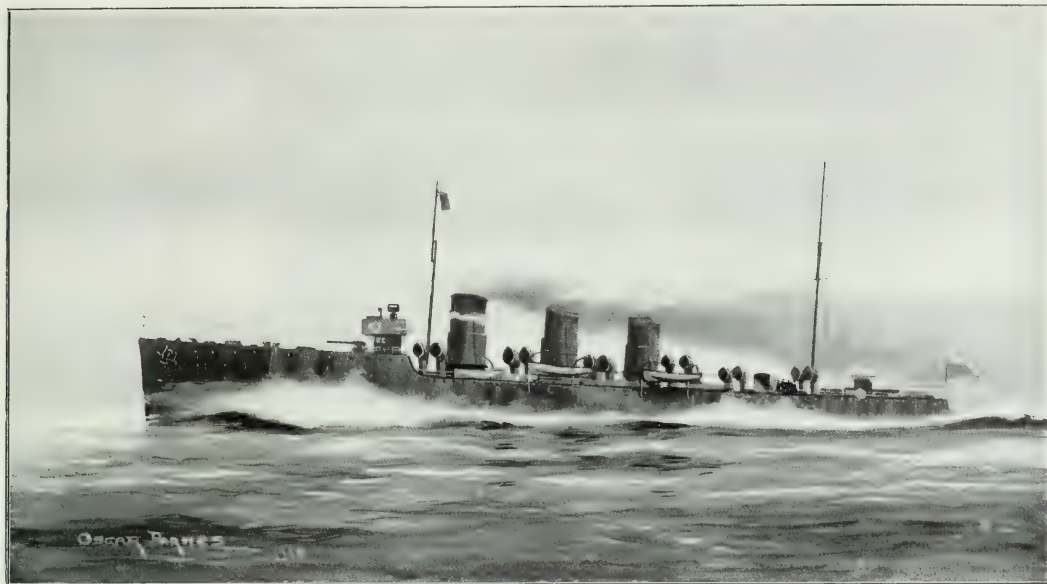
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Sister ships: *King Alfred, Good Hope, Drake*.

### DONEGAL. Armoured Cruiser. Launched 1902.

Displacement, 9,800 tons; I.H.P., 22,000; Speed, 23 knots; Armament, four 6-in., ten 6-in., ten 12-pr., three 3-pr.; two submerged torpedo tubes; coal capacity, 800-1,600 tons. Crew, 700.

Sister ships: *Essex, Kent, Monmouth, Bedford, Cornwall, Suffolk, Berwick, Cumberland, Lancaster*.

## GALLEONS REACH AND N. WOOLWICH.

### BERWICK. Armoured Cruiser. Launched 1902.

Displacement, 9,800 tons; I.H.P., 22,000; Speed, 23 knots; Armament, four 6-in., ten 6-in., ten 12-pr., three 3-pr.; two submerged torpedo tubes; coal capacity, 800-1,600 tons. Crew, 700.

Sister ships: *Essex, Kent, Monmouth, Bedford, Cornwall, Suffolk, Cumberland, Lancaster, Donegal*.

### ARROGANT. Second Class Protected Cruiser. Launched 1896.

Displacement, 5,750 tons; I.H.P., 10,000; Speed, 19 knots; Armament, eleven 6-in., eight 12-pr., one 12-pr. boat gun;

three 3-pr.; two submerged torpedo tubes; coal capacity, 500-1,175 tons. Crew, 450.

Sister ships: *Furious, Vindictive*.

## SILVERTOWN.

### SAPPHIRE. Third Class Protected Cruiser. Launched 1894.

Displacement, 3,000 tons; I.H.P., 7,000; Speed, 20 knots; Armament, twelve 4-in., eight 3-pr.; two torpedo tubes above water; coal capacity, 300-500 tons. Crew, 296.

Sister ships: *Diamond, Amethyst, Topaze*.

## BLACKWALL AND MILLWALL.

### BLAKE. Second Class Protected Cruiser. Launched 1889.

Displacement, 9,000 tons; I.H.P., 13,000; Speed, 18·5 knots; Armament, four 6-in., four 12-pr., six 6-pr. Crew, 590.

Sister ship: *Blenheim*.

### BLENHEIM. Second Class Protected Cruiser. Launched 1889.

Displacement, 9,000 tons; I.H.P., 13,000; Speed, 18·5 knots; Armament, four 6-in., four 12-pr., six 6-pr. Crew, 590.

Sister ship: *Blake*.

### THAMES. Depot Ship for Submarines. Launched 1885.

Displacement, 4,050 tons; I.H.P., 3,800; Speed, 16·0 knots; Armament removed; workshops fitted; coal capacity, 500-900 tons.

Sister ship: *Forth*.



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**B. MORRIS & SONS, LTD., LONDON, E.**



H.M. SUBMARINE C 10.

[Photo, West &amp; Sons.]

**BONAVENTURE.** Depot Ship for Submarines.  
Launched 1892.Displacement, 4,360 tons; I.H.P., 7,000; Speed, 18 knots;  
Armament, two 6-in., eight 6-pr.**HAZARD.** Torpedo Gunboat. Launched 1894.Displacement, 1,070 tons; I.H.P., 2,500; Speed, 17 knots;  
Armament, two 4.7, four 6-pr; five torpedo tubes; coal  
capacity, 100 tons. Crew, 115.Sister ships: *Dryad, Halyon, Harrier, Hussar.***VULCAN.** Repair Ship. Launched 1889.Displacement, 6,620 tons; I.H.P., 7,200; Speed, 17.5 knots;  
Armament, eight 4.7-in., twelve 3-pr., one boat gun, sixteen  
Nordenfeldt; six 2nd Class torpedo boats; two counter-mining  
barges, four steam boats, six torpedo tubes; coal capacity,  
1,000-1,277 tons. Crew, 432.

(All depot ships for Destroyers and Submarines.)

**GREENWICH AND DEPTFORD.****SKIRMISHER.** Scout. Launched 1905.Displacement, 2,895 tons; I.H.P., 16,899; Speed, 25.2 knots;  
Armament, ten 12-pr., eight 3-pr.; two above-water torpedo  
tubes; coal capacity, 150-485 tons. Crew, 268Sister ship: *Sentine.***PATHFINDER.** Scout. Launched 1904.Displacement, 2,940 tons; I.H.P., 17,176; Speed 25.34 knots;  
Armament, ten 12-pr., six 3-pr.; two above-water torpedo tubes;  
coal capacity, 150-485 tons. Crew, 300.Sister ships: *Forward, Foresight and Patriot.***ADVENTURE.** Scout. Launched 1904.Displacement, 2,670 tons; I.H.P., 15,850; Speed, 25.42 knots;  
Armament, ten 12-pr., eight 3-pr.; two above-water torpedo  
tubes; coal capacity, 150-450 tons. Crew, 290.Sister ship: *Attentive.***FORWARD.** Scout. Launched 1904.Displacement, 2,850 tons; I.H.P., 15,000; Speed, 25.28 knots;  
Armament, fourteen 12-pr., two 3-pr., two above-water torpedo  
tubes; coal capacity, 150-485 tons. Crew, 268.Sister ships: *Foresight, Pathfinder and Patriot.***GREENWICH TO LONDON BRIDGE.****TORPEDO GUNBOATS AND DESTROYERS.****LONDON BRIDGE TO WESTMINSTER.****TORPEDO BOATS AND SUBMARINES.**

## KING EDWARD VII GOLD CUP.

**T**HIS Gold Cup is probably the most coveted trophy of the year. It is 25½ inches high, and weighs 108 ounces. The keen competition for its possession must go far to make the International Horse Show the gigantic success it undoubtedly is.

It is a typical example of a standing cup of the Elizabethan period. The ornamentation is much enriched with repoussé work, with the gem-like decoration of the Renaissance period outstanding upon the bands and scrolls. The oval in the centre bears the Royal cipher with crown. The body is surmounted with a highly decorated finial. The stem is richly ornamented, and terminates with four brackets supporting the body of the cup.

The work was carried out by the Goldsmiths' and Silversmiths' Company, Ltd., of 112, Regent Street, London.

Their design was selected in open competition with the leading goldsmiths in the kingdom. It is a noteworthy fact, that



the same subtle inspiration for the beautiful in design is apparent in the simplest piece of jewellery turned out by this historic house.

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When a firm of this standing makes the absolute statement that quality and design considered, they sell at lower figures than anyone else in the world, there can be no disputing the fact. Certainly their selection is unrivalled for variety, and the designs are superlatively good.

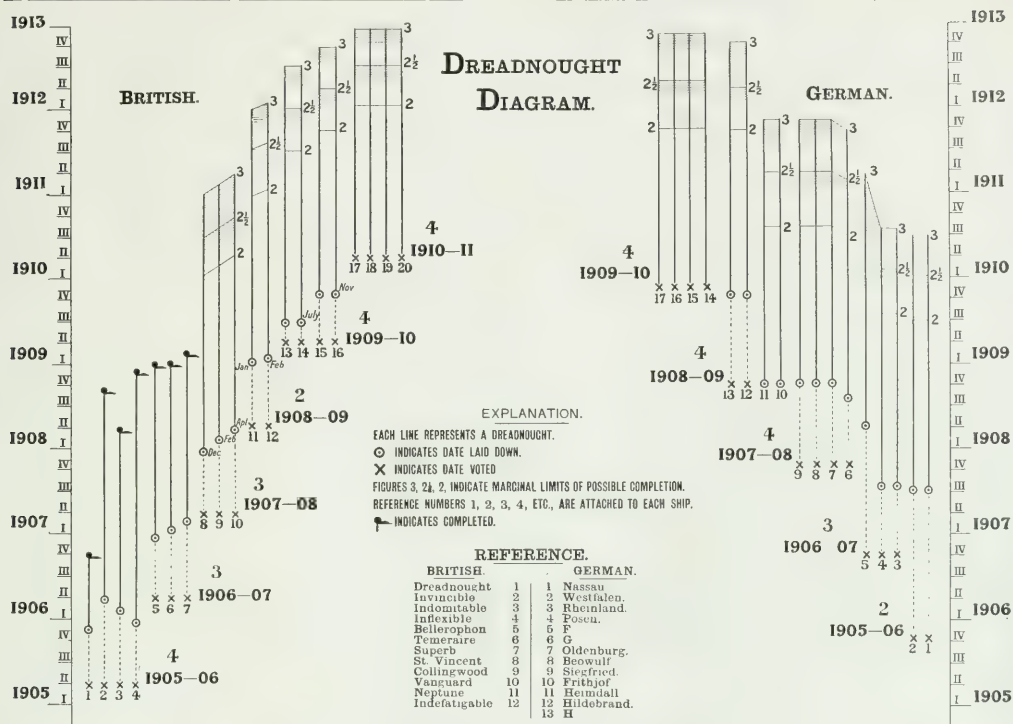
The public may wander round the beautiful premises at 112, Regent Street at will, there is no importunity to purchase; all these treasures are freely shown to visitors simply as a matter of courtesy.

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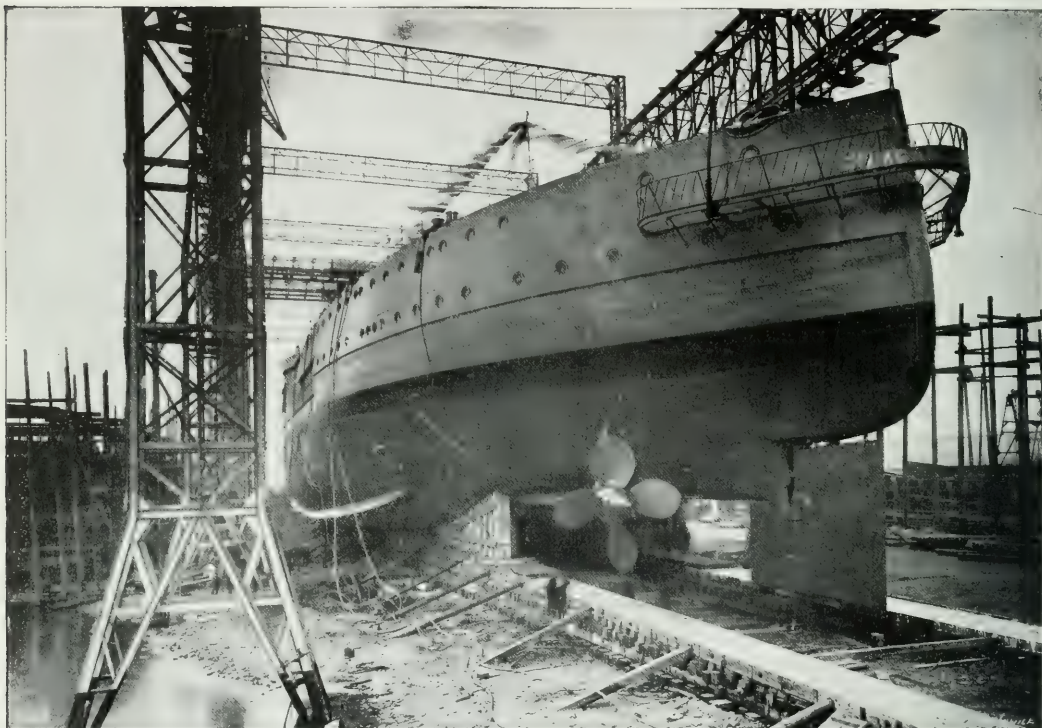
NOTE.—Nos. 13 and 14 British are the *Hood* and *Colebrook* building in private yards.

programme. Of these last four ships, two were laid down some time before their due dates, and arrangements have already been made for the building of the other two. Further, we know that the German Navy League is urging for an increase even on this heavy programme. These facts by themselves are serious enough, but they are not all. Since our naval estimates were presented in March, it has become known that Austria, a country bound by ties of the closest alliance with Germany, is adopting a naval programme which will give her in a few years a strong position in the Mediterranean. Without using the language of exaggeration or of panic, the Navy League wishes to bring these indisputable facts before all of its fellow citizens that it can reach. We ask those who read this Guide to consider and weigh them with care, to appreciate what they mean to the country which we love and to the Empire of which we are so justly proud, and to use their best endeavours to encourage a sound public opinion, which will serve to strengthen the hands of those responsible for the safety of the country. There may be other ways in which this valuable and necessary work can be done, but there is none which will be found more effective than that of supporting the Navy League and assisting to make it a force to which even Ministers of the Crown must listen.

## THE TWO FLEETS OF THE ITALIAN RACE.

BY THE RIGHT HON. SIR CHARLES W. DILKE, BART., M.P.

ALL know the admirable courage and discipline that have uniformly distinguished the navy of Austria in her varied historic forms. Few recognise how little Austrian, in the South German sense, is, and ever has been, the Austrian fleet. British passengers by Austrian-Lloyd steamers are always puzzled when they first hear the words of command given in the Italian tongue, and find themselves unable to recognise anything that is German in the commercial fleet which has its headquarters at Trieste. But Trieste itself is a German city (large as is its Italian population) when compared with the ports of the Dalmatian coast, which, whether Austrian or Hungarian, have always been the bases of the Austrian navy. That there is a considerable Slavonic element on that coast no one can doubt, but, just as the Greek tongue and Greek civilisation have affected all the various races of the maritime provinces of Asia Minor, so the Italian tongue and Italian civilisation have treated the Slavs of the North-Eastern Adriatic. The navy which fought against



H.M.S. AGAMEMNON. VIEW OF STERN, SHOWING RUDDER, ETC.

[from "Engineering," June 29, 1906.]

Launched on June 27, 1906, from the Works of Messrs. W. Beardmore &amp; Co., Dalmuir, N.B.

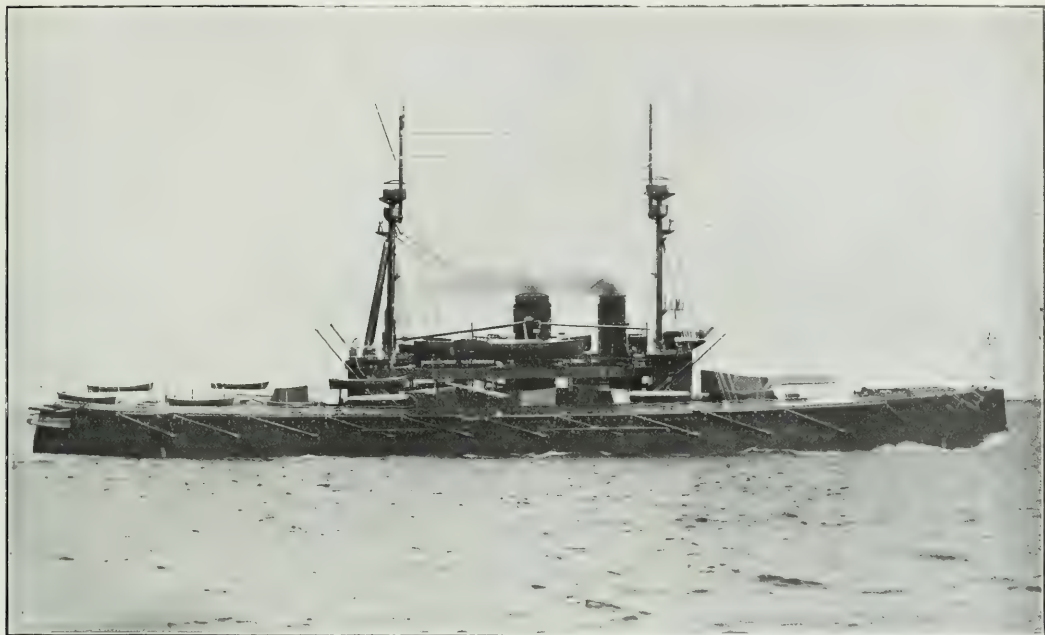
Italy at Lissa was, from most points of view, a rival Italian, rather than a German, fleet. The seamen were, perhaps, as Italian as their rivals, and the officers, though many of them belonged to great Slav families, were mostly rather Italian than German by habit of life: not of course in national sentiment.

It is universally admitted by competent observers that the progress in recent times of the Austrian land forces has been at least as remarkable as that of the armies of France or Switzerland. If the Prussians have stood still, or perhaps declined as regards High Command, though animated by a lasting scientific tradition, the Austrian army has made a progress so continuous as to suggest the possibility that an Austrian navy may also prove far more efficient than until within a few months had been supposed.

The extraordinary results achieved by Austria in her recent naval construction are obvious to all who study the lists of European fleets and the naval budgets of the various Powers. Not even in the case of the Bulgarian, Roumanian, or Swiss armies are results more striking achieved so cheaply. Just as France, always near the top of the list of naval Powers in

the character and discipline of her seamen, contrives to spend the maximum on dockyards and construction, when regard is had to the result in ships; so Austria turns out, relatively speaking, the finest fleet for the least expenditure. Spending a fifth of the French expenditure, Austria now possesses, as compared with France, a fleet at least twice or thrice that which mere comparison of charge would lead us to expect.

These are facts more important than a list of *Dreadnoughts* or supposed *Dreadnoughts*, existing, moreover, only in the form of project or on paper. Large ships have already been turned out by France, which, though called *Dreadnoughts*, are and will be far behind the most modern British ships. The *Dreadnoughts* of Austria, like those of France, may be antiquated before they are constructed. In *materiel*, Italy possesses and will keep a lead over Austria: but those French writers who defend the new naval programme as intended to prepare for the maintenance of the two-Power standard by France in the Mediterranean can hardly expect that France will be able to keep a lead over a possible combination of Austrian and Italian forces. Without counting Spain or Russia, the vital



H.M. BATTLESHIP AGAMEMNON.

[Photo by Messrs. W. Baylis &amp; Co.]

Launched 1906. Of 16,500 tons. Armament: Four 12-in., ten 9·2-in., fifteen 12-pr., twenty-three 3-pr., five submerged torpedo tubes. I.H.P., 16,750. Speed, 18 knots. Coal capacity, 900 2,500 tons; also oil.

Sister Ship, *Lord Nelson*.

necessity for France to possess this Mediterranean superiority can hardly be proved on a consideration of what the Triplice has been or is in respect of Italian policy. It is certainly with no view of adding the Italian fleet to that of Austria that any Italian statesman supports the increase of Italian naval expenditure, now adopted with the concurrence of both parties in the Italian Parliament. It is hardly necessary to express pity in advance for the Austrian or Italian admiral who might be called through seniority to command in battle against a Latin Power such strange allies as an Italian and an Austrian fleet. Even in the palmy days of the Triplice, Italy never failed to make clear to her German ally that her policy in the Mediterranean was distinct from her defensive military alliance with the two mid-European Empires. Among the many possible dangers with which European peace is threatened, one involving a struggle by France against the fleets of the other Mediterranean Powers is, perhaps, the least probable.

### MEMBERS OF THE NAVY LEAGUE.

MEMBERS of the Navy League will be received on board His Majesty's Armoured Cruiser *Inflexible* on the 21st July. The reception will be at 10.30 in the morning, and details of the arrangements are being perfected, and full information will be obtainable by application to the Secretary.

## IMPERIAL DEFENCE.

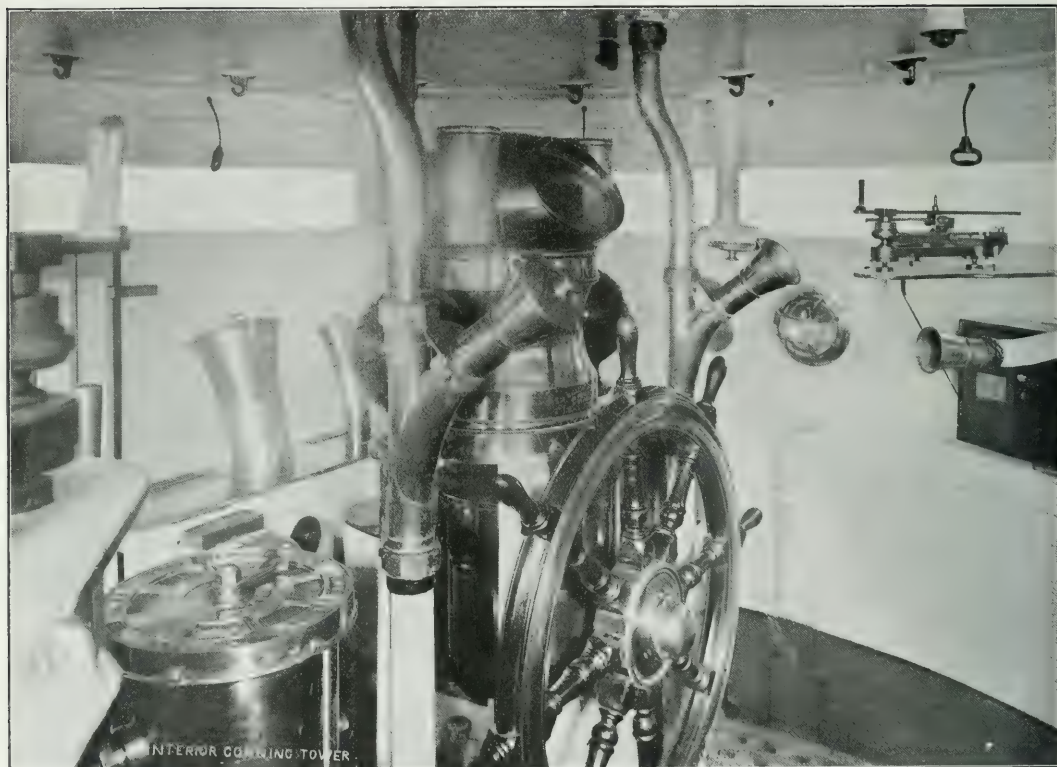
### (a) THE ROYAL NAVY AN IMPERIAL FORCE.

BY ADMIRAL SIR CYPRIAN A. G. BRIDGE, G.C.B.

It has recently been said that the time has come for making the Royal Navy the "Imperial Navy." This conveniently summarizes the public opinion and the national requirements of the day. In one, and that a thoroughly practical, sense the Navy has always been Imperial. In its distribution and activity there has been no distinction between one part of the Empire and the others. Its ships and their crews have been, and still are, unreservedly at the service of every part wherever situated. What public opinion now desires is what the time has at length come for carrying out, viz., the formal recognition of the advantages of incorporating in the Navy that which the wealth and strength of the King's great Over-sea Dominions can supply. There is not the slightest need to change the old and glorious title of Royal Navy into something else. What is needed is to make that title cover, formally as well as practically, more than hitherto it has been thought to cover.

It is an interesting fact that the earlier Patents constituting the Admiralty conferred on the Board the powers of the Lord High Admiral, who was the chief Naval authority not only of the United Kingdom, but also of the "Dominions, Islands,





INTERIOR OF THE CONNING TOWER OF THE BATTLESHIP CESAR.

(Photo, Gale &amp; Polden.

and Territories thereunto belonging." In the Patent many distant possessions of the British Crown were specifically named; and all were included in the summary mention of "all and singular Our Foreign Plantations, Dominions, Islands, and Territories whatsoever, and places wheresoever thereunto belonging." The insertion of these statements in the Patent was, no doubt, intended to signify the legal jurisdiction of the Admiralty, under which Governors are usually appointed Vice-Admirals, a title which, in their case, has no Naval meaning but merely indicates that they had under them local Vice-Admiralty Courts. The terms of the statements also show that, as regards purely Naval administration, the Board of Admiralty was meant to be what we now generally call "Imperial," and was to aim at securing naval efficiency in all parts of the British Dominions, and not in the Mother Country alone.

Therefore, should the great Over-sea Dominions form sea-going naval forces, it will be in accord with ancient principles, as well as with the conditions of sound Naval administration, if those forces look to the Admiralty as to a centre of instruction and direction. The objections to pecuniary contributions by the great self-governing Dominions

are now generally recognised; so also are the relative weakness and costliness of mere localised defence flotillas. The establishment of true sea-going squadrons, of properly proportioned strength, is likely to be the form that participation in the Naval defence of the Empire will take. These, if organised, trained, and administered on lines exactly identical with those followed in the Home Navy, will constitute an effective reinforcement of the latter, whilst it would ensure the efficiency of their co-operation if the Admiralty comprised a department in which the details of the co-operating work would be dealt with. The Royal Navy would, in that case, include additional parts, which ought to add to its material, and still more to its moral strength, and make it a truly Imperial Force.

#### (b) THE NAVY AND THE EMPIRE.

BY GERARD FIKNES.

THE British Empire contains about 400,000,000 people, of whom some 60,000,000 are white. The remaining 340,000,000 depend on this small minority for their defence, save and except the peoples of India, who have the protection by land of a native Army. Out of the 60,000,000 white men, some



MESSDECK OF THE BATTLESHIP JUPITER.

*(Photo, Capt. S. Polden.)*

42,000,000 inhabit the British Islands, while the remaining 18,000,000 are scattered over Canada, Australia, South Africa and New Zealand. Except for certain small contributions in money and the maintenance of a few regiments of Militia by some of the states, the 42,000,000 at home bear the whole burden of defence.

Necessarily, in an Empire the different parts of which are separated by thousands of miles of blue water, the main defence is by sea. Britain maintains, and must maintain, a Navy of which the supremacy is unchallengeable, not only for "the defence of these islands," as the Prime Minister, in a moment of absent-mindedness, seemed to imply, but for the defence of every one of the scattered states, of the trade between them and herself, and of the supplies of food and raw material which are necessary to her existence.

So long as only European Powers possessed Navies, and so long as international quarrels were only likely to arise out of dynastic or other ambitions in Europe, the defence of the whole Empire meant little more than the defence of the Mother

Country: the two stood or fell together. And the keys which lock the gates of the world were in the hands of Great Britain. More especially has this been so since steam has necessitated the possession of coaling stations, without which, distant enterprises could not be undertaken.

Now, however, at the time when the most determined challenge to our naval supremacy has arisen that we have had to meet from any European Power since the days of the old Royal Navy of France, there are two Powers outside Europe, the United States and Japan, which have risen into the first rank of naval strength. Both, we are glad to believe, are imbued with a sincere spirit of friendship towards us. With the one, we claim community of race; with the other, a cordial alliance, which will last, at any rate, for six years more. Great Empires, however, do not exist on sentiment, but on armed might. War may never come, but the surest way to avoid war is to have such a force ready for instant action as will make war an unpalatable and unprofitable enterprise. The first duty of the Navy is not to fight, but to keep the peace.

H.M. ARMOURD CRUISER *INDOMITABLE*.

Launched 1907. Of 17,250 tons. Armament : Eight 12-in., sixteen 4-in., 3 submerged torpedo tubes. I.H.P. 41,000. Speed, 25 knots. Coal capacity, 1,000-2,500 tons.  
Sister Ships, *Invincible* and *Inflexible*.

Three unarguable propositions may be laid down: (1) No one part of the Empire can be at war alone; (2) It is the duty of each part of the Empire to provide according to its means for its own defence; (3) Concentration in war spells success, and dissipation of force spells failure.

If, therefore, each separate part of the Empire desires, for perfectly intelligible reasons, to provide its own quota to the might of the whole, it is essential that the type of ship built and the other provisions for defence made, should be of a kind which will contribute most effectually to the general action, and can be most swiftly combined with the rest. How this may be brought about it will be the task of the forthcoming Conference on Imperial Defence to decide. But one thing is plain; that the provision of squadrons composed of ships of inferior power will be a mere waste of money. If once the Imperial fleet suffers defeat, the local squadrons will be "mopped up" in detail. On the other hand, a small number of swift and powerful ships of great sea-keeping capacity, such as the *Invincibles*, capable of being rapidly concentrated on a threatened spot, would contribute most powerfully to the safety of the whole.

Such vessels, maintained by Canada, Australasia, and (in due time) by South Africa, manned by Canadian, Australasian, and South African sailors, and based on ports capable of

supplying all needs, both for them and vessels of the Royal Navy requiring dockyard care, would be at once a provision for local defence and an evidence of local patriotism, and a real contribution to the safety of the Empire as a whole. But these squadrons must be available for service wherever required, and not tied to the local waters of the State which maintains them. It is not for Britannia to await attack off her own shores. The frontiers of the Empire are the enemy's coasts.

#### (c) **COLONIAL NAVIES.**

BY FRED T. JANE.

I AM asked to write my views on Colonial Navies, and will preface these remarks by saying that both strategically and ethically my opinions are probably wrong. But for real practical utility, in my private opinion, it is a case of something such as I suggest, or nothing.

It was my luck to be shipmates with the first colonial sailor who ever came to England. It was many years ago now that I did a manoeuvre on the same ship with him. He was an Australian, so, of course, was christened "the Kangaroo." Those who gave him that name, usually addressed me as "Sally"—their rendering of "Jane." The Kangaroo took his nickname very badly, and when we chummed up, confided to me that being a Colonial, he was despised, and that it took the stuffing out of him accordingly.



## THE ANTIDOTE.



STEAM TRAWLER NUNTHORPE HALL.

*[Photo, Parry, South Shields.]*

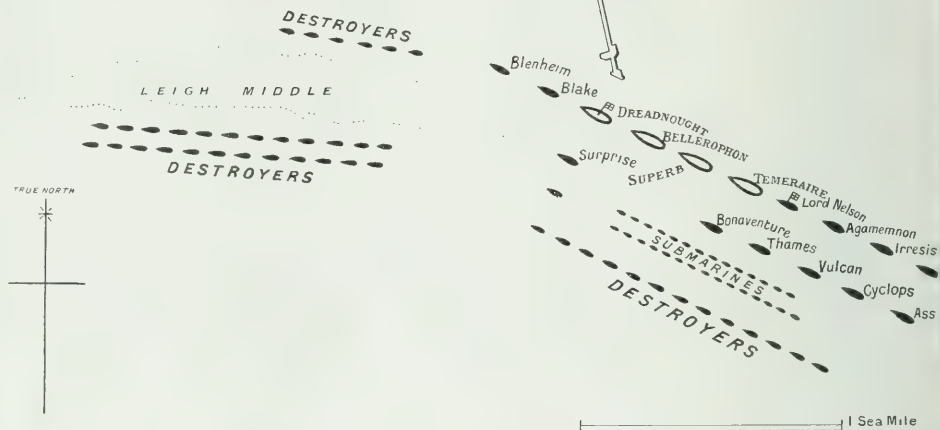
NOTE.—TO OBVIATE THE RISK FROM ENEMIES' MINES, THE ADMIRALTY HAS RECENTLY PURCHASED FIVE STEAM TRAWLERS, WHOSE FUNCTION WILL BE TO SWEEP FOR POSSIBLE MINES IN SUSPECTED WATERS, AND SO CLEAR A PASSAGE FOR OUR WARSHIPS.

will no doubt on this occasion write concerning England's Naval supremacy in what Mr. Punch termed "this rancid strain of fulsome complacency." It would be well if by some magic spell there could be raised up before the eyes of these over-confident people, who will not realise England's true position, the aspect of this same River Thames on a certain summer's day in the middle of the seventeenth century. It was no day of pageant on the river; there was no triumphant waving of bunting or patriotic pride of holiday crowds. It was a day of shame, and terror and sudden death—a sky obscured with a pall of smoke sombrely lit by the flash of guns and the flames of burning ships and houses; the air full of noise, the cries of men, the rolling of drums, the roar of cannon; the destruction of a British Fleet; the river floating with wreckage; an enemy ravaging and burning; panic in the threatened capital, and the fleeing inland of terrified inhabitants.

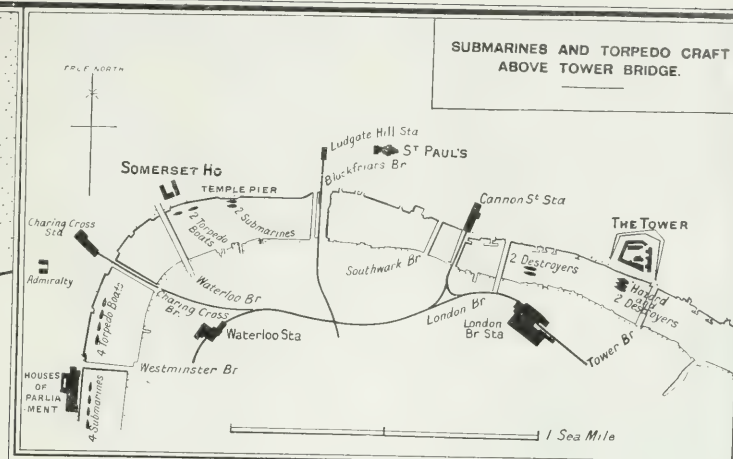
A striking analogy may be discovered between the position of England at the present time and that in the year 1666. Then, as now, economies were effected at the expense of national defence in order that the public monies might be devoted to other purposes. Then, as now, men in high places were quite satisfied that the intentions of the people on the other side of the North Sea—despite the fact that these people were strengthening their armaments—were entirely pacific. In 1666, the money voted by Parliament for the Navy—a sum equivalent to five millions in the present day—was diverted to provide the wherewithal to meet the cost of the extravagance and dissipations of Charles II. In 1909, a British Parliament, in opposition to the will of the bulk of the British taxpayers, who believe that the maintenance of England's sea supremacy should be the first care of the Government, is diverting the money supplied by those taxpayers from the purposes of

# THE FLEET IN THE THAMES JULY 20TH, 1909.

Dreadnought type shown 

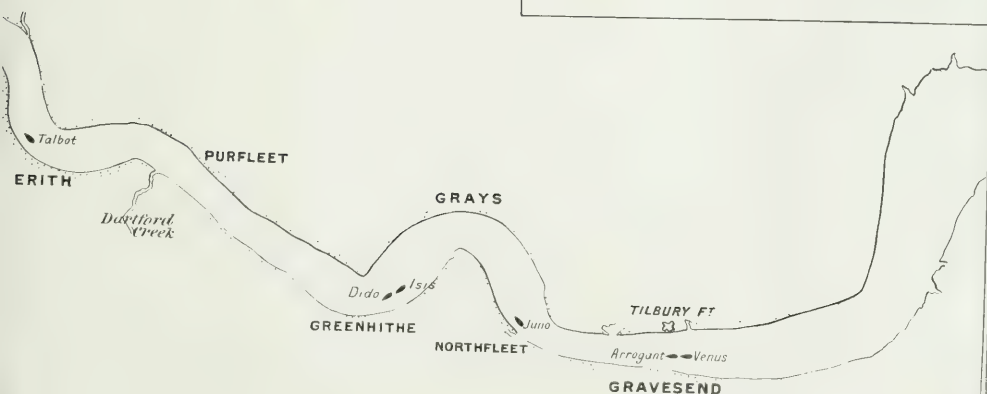


Battleships	24
Armoured Cruisers	16
Other Cruisers	10
Scouts	4
Torpedo Craft	55
Submarines	35
Auxiliaries	6
<b>Grand Total</b>	<b>150</b>



ark Drake INDOMITABLE INFLEXIBLE INVINCIBLE Prince of Wales Queen Implacable Albion Albemarle Formidable Cornwallis Russell Good Hope Duke of Edinburgh Black Prince Leviathan Donegal Minotaur King Edward VII Britannia Hindustan Dominion Hibernia New Zealand Commonwealth Africa Shannon Warrior Defence Cochrane Natal Berwick

**VESSELS MOORED BETWEEN  
GRAVESEND & WESTMINSTER.**





national defence to extravagant experiments in what is termed social reform. In 1667, as the result of the neglect of the rulers of England to prepare for war, the most disgraceful disaster that has befallen this island throughout its long history abruptly roused Englishmen from their dream of security.

Through the summers of 1665 and 1666 the British and Dutch Fleets had been fighting each other valiantly in the North Sea and the Channel. In those days it was the custom of warring nations to lay up their fleets during the winter months, and this was done by both England and Holland in the winter of 1666-7. During this cessation of hostilities negotiations for peace were carried on by the two Governments; an arrangement was arrived at; a few minor points alone remained unsettled; the early ratification of a treaty of peace was regarded as certain, and this optimistic view was supported by the news that came to England by way of France, to the effect that the Dutch had no intention of fitting out their fleet. The men responsible for England's safety now came to the conclusion that, as there was no danger of war, the money required to meet the personal wants of the extravagant sovereign might easily be provided by effecting economies in naval expenditure, and consequently, in February, 1667, it was decided by the Government that the Fleet should not be commissioned that summer. There were, of course, statesmen and sailors who raised warning voices as to the danger of unpreparedness for war; but these, no doubt, were scoffed as panic-mongers by the subservient courtiers, who glibly argued that madmen only could conceive the possibility of the invasion of England, that monies should not be wasted on useless armaments, and that it would be time to make ready when war was threatening. So it was decided that the greater part of the English Fleet should be laid up, and practically dismantled, in the Medway, while only one small squadron of third and fourth rate ships was fitted out for police work in the Channel.

In the meanwhile the Dutch, while protracting the peace negotiations, were secretly mobilising their fleet for a surprise attack on our undefended shores. Rumours of activity in the Dutch ports reached the English Admiralty, which, however, took no defensive measures beyond giving directions, on March 25th, that the sixteen large men-of-war lying in the Medway should be moved up the river to near Chatham, and that a great chain supported by floats should be laid across the estuary near the village of Gillingham. A couple of guardships were to defend the chain, and earthworks were to be thrown up and manned along the river banks. It seems that even these wholly inadequate preparations were not properly carried out.

The disgrace that now befell England, to quote the historian Hume, "could be ascribed neither to bad fortune, to the misconduct of admirals, nor to the ill-behaviour of seamen, but solely to the avarice, at least to the improvidence, of the Government." On the 7th of June, De Ruyter arrived off the mouth of the Thames with sixty ships of the line, besides frigates and fire ships, and for a week the Dutch, of a sudden

having become the undisputed masters of the ocean, held the sea gateway to England's capital, and filled the country with confusion, terror, and indignation. A mere capitulation of the events of that week will suffice to show the magnitude of the disaster. First the Dutch attacked, captured and destroyed Sheerness. Then the enemy's ships sailed up the Medway to within two miles of Gillingham, where their further progress was obstructed by some British fire ships which had been sunk in the channel. But on the disastrous 12th of June they contrived to pass this obstruction, and after capturing the frigate *Unity* they charged the great chain with two fire ships and broke it. The two ships which lay to guard the chain, the *Matthias* and *Charles the Fifth*, were set on fire and blown up, and the land batteries, unable to withstand the Dutch attack, were abandoned. Then the *Royal Charles*, the most powerful man-of-war of that day, which had actually been left in the charge of half-a-dozen ship-keepers, was boarded and captured by two small boats. In the evening the enemy captured the 70-gun ship *Santa Maria*.

On the following day the attack was resumed. The *Loyal London*, the *Royal Oak* and the *Royal James*, three of the finest of British warships, which had been scuttled in shallow water so as to expose them as little as possible to the enemy's fire, were burnt by the Dutch to the water's edge. The *Loyal London*, which had been given to the country by the citizens of the capital, was the newest and most popular ship of the day, whose name was in the mouths of all the people, even as now is the name of the *Dreadnought*. Dryden wrote of her as follows:—

"With roomy decks, her guns of mighty strength,  
Whose low laid mouths each mighty billow laves,  
Deep in her draught and warlike in her length,  
She seems a sea-wasp flying on the waves."

The valour of our men was rendered of no avail by the criminal negligence of the Government, and such resistance as was offered was soon overcome. But there were incidents on that day of England's disgrace which it is good to remember. Thus, as the Dutch advanced, a company of soldiers, under the command of Captain Douglas, put off from the shore and boarded the *Royal Oak*, which lay in front of the other two scuttled ships. This little band of men succeeded in beating off two attacks of the Dutch. On the third onslaught the ship was set on fire by the enemy. Most of the troops escaped, but Captain Douglas perished with his ship in the flames, declining to leave her, as he had received no orders to retire. "Never was it known," he said, "that a Douglas had left his post without orders."

After this achievement the Dutch sailed out of the Thames estuary to threaten Portsmouth and Plymouth, and spread dismay through the south of England. They were apparently unaware of the full extent of the British unpreparedness, and of the fact that had they chosen they might have humbled London itself. During this audacious raid, panic prevailed



H.M. OCEAN GOING TORPEDO DESTROYER *INVINCIBLE*.  
 Displacement, 888 tons. H.P., 15,500. Speed, 33 knots. Armament - Two 12-in. guns, two 18-in. torpedo tubes. Oil capacity, 84 tons.  
 Sister Ship, *Satsuma*.

In a sea fight the majority of hits will be at an angle to the side, resulting either in a glance off or having an increased thickness to penetrate owing to the angle of incidence. If the 6-inch gun continues as part of the battleship equipment it will probably be as an anti-destroyer piece, the objection to it as such being the limited number capable of being mounted on either side. A similar objection applies to all other pieces under a calibre of 12 inches as a secondary armament. Mounted on the side you can only utilise half the number against a single ship, whereas with the *Dreadnought* type a greater proportion of the armament is available on either broadside. This was one of the strongest reasons given fifty years ago by the advocate for turret ships as against the broadside vessel.

Take the French new *Danton* class of 17,700 tons. They carry four 12-inch and twelve 9.4-inch guns, giving a broadside of four 12-inch and six 9.4-inch guns against our *Dreadnought's* broadside of eight 12-inch guns, one pair not being available owing to its fire being masked by the opposite turret. Eliminating four 12-inch guns common to each vessel, we have six 9.4-inch guns opposed to four 12-inch. I prefer the latter. Or take the Japanese *Satsuma* of 19,300 tons—a considerably larger vessel. She has twelve 10-inch in addition to four 12-inch guns, so carries six 10-inch on each broadside. In this case even the simplicity and power of the all-one-gun system also appeals to me more favourably. The same arguments apply to our *Lord Nelson* type. In fact, the all-one-big-gun ship represents the principle of concentration in its best form. When we had twenty or forty guns a side we

linked them all by an electric wire and fired as a concentrated broadside in the desire that all should strike together. The 12-inch projectile represents the concentrated effect of eight 6-inch guns. The defect of the old *Dreadnought's* armament was its limitation to two gun positions only, so that if a skilful shot of the enemy disabled one turret, half the armament was put out of action. In the new *Dreadnought*, with her five gun positions, there is greater distribution of the risks, and consequently less chance of a similar occurrence. Limits of space prevent my dilating upon other advantages accruing to a single big gun armament, but they are important.

It is immaterial how you designate ships of war. The point is what they can do. The new *Invincible* class are called armoured cruisers, though they carry eight 12-inch guns. By having eight instead of ten, and reducing the armour to allow of increased speed, we obtain a vessel capable of taking her place in line or acting on detached service. Viewed as swift battleships, they can perform useful functions. It may be remembered that previous to Trafalgar Nelson formed a division of his fastest two-deckers as a squadron of observation outside Cadiz. They kept him with the main body informed of the enemy's movements. The same mission may some day be confided to a squadron of *Invincibles*. They can also overtake and overcome any existing armoured cruisers if employed on such service. However viewed, they are magnificent vessels, costly, no doubt, but with us too much is at stake to allow any doubt as to our naval supremacy. Let us spare no effort to retain the lead which sagacity at the helm has given this country.

## TRADE ROUTES IN TIME OF WAR.

BY ARNOLD WHITE.

IF a pin-flag be stuck into a large scale map of the world on the spot wherever a British merchantman happens to be, it will be found that the main thoroughfares of the ocean are as distinct as Regent Street, the Rue de la Paix, or the Wilhelmstrasse. When means of propulsion were external to ships, convoy by war-ships was necessary. Ocean thoroughfares were then wide and ill-defined. On the transfer of the motive force from outside the ship to the thrust on the flanges of a submarine screw, convoy ceased to be the best means of protecting ocean lanes or avenues of traffic. Some of the ocean routes, such as that from Colombo to Fremantle, are little used, like roads in residential suburbs on Sunday. Others, such as that from Finisterre to Buenos Ayres, resemble Oxford Street at mid-day. British interests exist in no more concrete form than that of the congested stream of outward and homeward traffic with the Argentine Republic. Only when the ships of all nations are represented by a pin-flag inserted in the proper place on the map do ocean highways visibly assume their real relative importance.

By such pictorial means alone can the mind grasp the meaning to the British Empire of Sea Power. With half the world's tonnage flying the Red Ensign, safeguarding the trade routes of the world is a responsibility we cannot neglect without ceasing to be a great Power. Fortunately for the Mistress of the Seas the problem of protecting the ocean routes of traffic is now (subject to one condition) a simpler task than when Paul Jones or the French *loups de mer* kept the sea for months without replenishing their stores of food, rigging, and canvas. The essential condition of safety for our sea-borne traffic is our ability to attack and beat any naval combination or unit that may be brought against either our fleet or our mercantile marine. Commerce will best find protection by the destruction of foreign commerce destroyers as they emerge from port.

It is, moreover, unlikely that in the event of war with a Northern Power the enemy would attempt; or, if he attempted, could succeed in the method of *guerre-de-course*. Holding both entrances to the North Sea, enjoying the incomparable strategical advantage of position, and being on friendly terms with France, Spain, and Portugal, it is inconceivable that Britain would permit commerce destroying cruisers, without access to coaling stations or friendly ports of refuge, to emerge from the North Sea to prey on our merchantmen in the Atlantic. The enemy would not squander his North Sea cruisers in detail. So long as England is the stronger Power it is her interest to "change off" pieces of equal strength on the chess board of the sea. When equals are taken from unequals the relative strength of the stronger combatant is greater, and that of the weaker is less, than before the two pieces were removed from the board. The *guerre-de-course* is against the weaker Power.

In our five great wars with France and Spain the enemy enjoyed and we were denied the advantage of foreign coast ports other than those seized and occupied by Britain. In any probable war in which we are engaged the position will be reversed. Outside the North Sea our access to Atlantic ports will scarcely be contested. There remains to be considered the action of enemy cruisers or privateers lying astride our trade routes when war breaks out. Every warship belonging to a Power with which we are likely to be involved is, or should be, shadowed by a stronger force in time of peace from the day she leaves the Narrow Seas. No evidence exists to suggest that the Admiralty have neglected so obvious a duty; but if they have failed to detail an overwhelming superiority of force over all possible enemies, the nation will pay heavily for the omission. During the first fortnight of war every enemy's ship of war should be sunk or captured, and every enemy's merchant vessel on blue water transferred to our flag.

To maintain the two Power standard, not merely in tonnage or in pennants, but in the solid and effective elements of Sea Power, the safety of our Trade Routes—at all events after the first fortnight of war—should be made absolute. If due preparation has been made by Britain, the result of any challenge for the command of the surface would be the dispatch of every enemy's ship to the floor of the ocean.

In that case, and only in that case, ocean traffic would be safe. For the protection of Trade Routes "only numbers can annihilate." Admiral Sir A. K. Wilson, V.C., in the Atlantic manoeuvres of 1906, established the truth of the principles set forth above.

The danger to sea-borne trade of the British Empire from the adoption of new methods of maritime commerce-destruction, unless the Admiralty is prepared, cannot be exaggerated. Presumably the Sea Lords are fully alive to the danger of armed tramp steamers suddenly appearing on British Trade routes. Official assurance that proper precautions have been taken to meet sudden and systematic attack before declaration of war by ostensibly peaceful craft is desirable in the public interests.

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## OUR MERCANTILE MARINE.

BY OSCAR PARKES.

A BIG, stately Union Castle liner is slowly steaming past the anchored fleet, her white hull and red, black-topped funnels forming a striking contrast to the sombre-tinted battleships with their gaunt, tripod masts, broad, squat funnels and long, wicked-looking guns. She, together with a sea-swept cargo-boat high piled with wood from the Baltic, slogging her way through a North Sea gale, and that dirty collier that lies alongside a Tyneside coal-shoot are all units of a vast navy of peace—our Mercantile Marine, on which, almost as much as on the Fleet, our very existence depends. In every corner of the globe, from St. Lawrence River to Yokohama, and from Table Bay to Skagger Rack you will find our ubiquitous "Red



Duster"; everywhere where freights may be collected and cargoes unshipped, the main proportion of the tonnage cleared will be British. The carrying trade of the world is ours, and next to the destruction of our enemies, the duty of our "great silent navy" will be to protect our pockets and larders as represented by these the thousand and one wind-jammers, tramps, cargo-ships and liners.

The vast extent of our mercantile fleet may be gathered from the fact that it practically equals that of the rest of the world combined. Altogether we have some 37,000 vessels (excluding small coasting craft), totalling 12,200,000 tons and manned by 260,000 men. Of steamers displacing more than 100 tons (gross) we had in 1908 about 9,680 (Germany, 1,806; U.S.A., 1,608; Norway, 1,256; France, 869; and Japan, 865), or practically 56 per cent. of the steam-driven tonnage of the world. To ensure the safety of these islands and our Dominions overseas, and to protect the £1,000,000,000 odd of exports and imports we are only paying £35,142,700 on the Navy as insurance!

Apart from their value in peace time, our larger merchantmen will be of incalculable use in war. What other nation could have transported those 250,000 men to South Africa as we did? What other Power has the fleet of sub-ventioned liners, including such ships as the *Lusitania*, *Mauritania*, *Oceanic*, *Caronia* and the like, which can be used as "scouts" or cruisers? When the U.S. Government sent their fleet on its world tour, the colliers that accompanied it were British, and war will demand hundreds of such vessels to keep the bunkers of our ships supplied with fuel.

Owing to the large number of Lascars (43,000) and foreigners (40,000) that at present man our Mercantile Marine, we shall not be able to use it as a recruiting ground for the Navy so much as we have done in past years, and therefore any movement organised to popularise the merchant service amongst Britishers is to be heartily welcomed. To what extent the foreign element aboard our merchantmen will menace the national safety during war is an open question, but in any case the presence of those 40,000 hands of mixed European nations is to be deprecated. By the increase in number of such training schools for boys as the Navy League maintain at Liskeard, and by the encouragement of the rising generation to take to the sea for a livelihood, it should be possible to greatly augment the number of Britishers afloat under the Red Ensign, and at the same time provide a sound nucleus for Navy recruiting. The Royal Naval Reserve, consisting of 25,000 merchant seamen, stokers, fishermen, and the like, will probably be wanted afloat where they are now, even more during war than in times of peace, while owing to the way in which they are scattered all over the world, it will be difficult to get at them should the Navy require their services. Hence this force, which supplies nearly half of our total Reserve, could be increased with advantage.

Of the actual ships outside the Navy, perhaps the two giant Cunarders *Lusitania* and *Mauritania* appeal most strongly to

the popular imagination on account of their immense size and great speed. As fast as the *Indomitable*, and of twice her tonnage, these magnificent vessels seem to dwarf every other ship afloat, whilst the regularity with which they lower the Atlantic records comes as sop to our insular prejudice against the many years these blue-ribands were held by German liners. For war purposes both are fitted to carry 14 6" guns—an armament equal to that of the "County" cruisers—and these in conjunction with their 25-26 knots speed will make them most valuable auxiliaries. In direct contrast as regards size, we find such insignificant vessels as North Sea trawlers to possess a martial value; as fitted for mine-sweeping their presence with a fleet will be of incalculable value. Several have recently been purchased by the Admiralty and relegated for such service. Thus, from the biggest to the smallest, nearly every type of merchant and passenger ship could be utilised during hostilities, and in view of the valuable services rendered by converted yachts in the Spanish-American war, the call might even be extended to the floating palaces which forgather in the Solent during Cowes week.

In short, our Mercantile Marine and all other vessels which sail under Old England's colours must be regarded both in the light of their peace and of their war use.

Let us feel the same national pride for them that we do for the ships that fly the White Ensign. They are only liners, colliers, and trawlers to-day, but when the time comes England may have to fall back upon them to help preserve the integrity of the Empire.

## PLAIN FACTS ABOUT OUR SHIPS AND GUNS.

BY ALAN H. BURGOYNE.

It will perhaps be news to some of our readers to learn that the term "ironclad" cannot strictly be applied to any of our newer ships. In the *Queen*, the area of the side above water is about 12,000 square feet, of which 5,000 feet at the outside are protected by armour. Thus over more than half of the side, a shell, even of the smallest size, could penetrate with ease. The explanation is that no ship could carry sufficient armour over her whole side to exclude such shells as the 6-inch or 9·2-inch, unless she were left without guns and ammunition.

The diagram will show at a glance the various methods of protecting ships between 1859 and 1908. The armour grows thicker and thicker between 1859 and 1885, and then there is a move in the opposite direction. The diagram of the *Edinburgh* represents the typical ship of 1886; in her case less than one-fourth of the side above water was armoured. In an action, vessels with so much exposed side would have suffered terribly and a move towards more general protection is to be noticed in the *Royal Sovereign*, *Majestic*, *Queen*, and later classes.

In the first there is a mixture of thick and thin armour; in the second, a uniform thickness of moderate armour; in the third, a large area of moderate armour, with thin armour forward and aft.

Battleships may be distinguished from other vessels thus :— they have thick armour on the water-line to keep them afloat, and they must have armour on the principal guns to protect the lives of the men fighting the ship. As the captain's life is of the utmost importance—he being the virtual brain of the ship—a small circular shelter of thick armour, known as the conning tower, is always provided for him. These conning towers are fitted with voice pipes, steering gear, torpedo-firing keys, and other mechanism for working the ship.

All modern battleships and all cruisers of any size have an armour deck which runs the whole length of the ship, from stem to stern, dividing the interior into two halves, the one above the water, the other below the water-line. This deck protects the engines, boilers, and magazines from injury inflicted by shells which may enter where there is no armour on the side and burst inside the ship. In some ships there

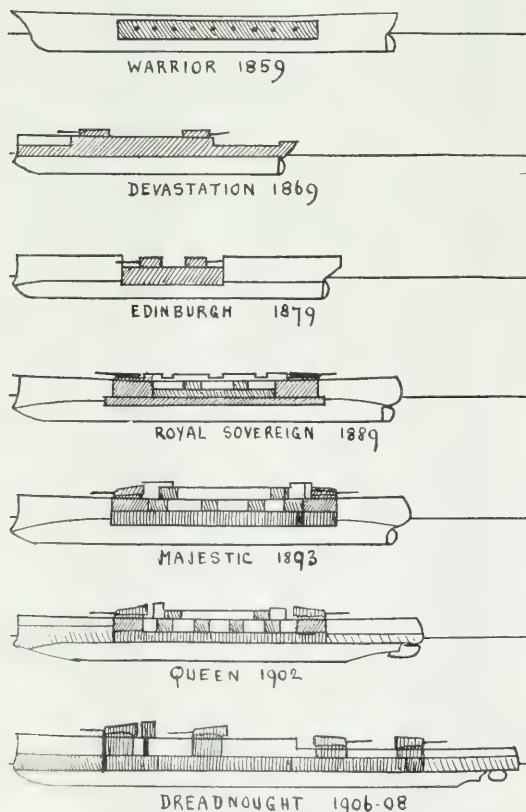
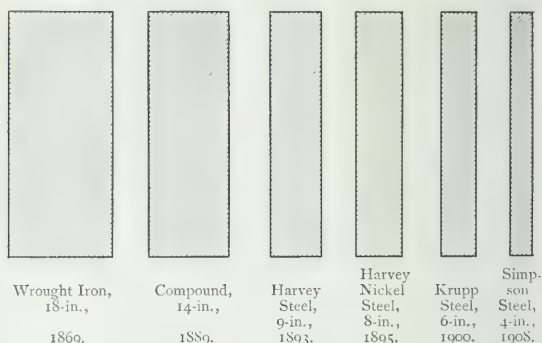


Fig. 1. Diagrams of armour-plating Battleships, 1869-1908. The shading indicates the thickness of armour; left to right, 6 in. thick or less; upright, 9 in. to 7 in.; right to left more than 10 in. thick. Upright lines in DREADNOUGHT are 14 in. to 10 in. thick.

are two decks of armour, the lower to keep out splinters; in British ships the deck ranges in thickness from 1 to 4 or 5 inches, and usually curves up in the centre, to give greater space for the engines. In cruisers and battleships further protection is given by coal-bunkers, which are so arranged as to encircle the most important parts of the ship. Ten feet of coal would stop most shells, but the coal, unfortunately, has to be burnt in the boilers, and may not be there in the hour of battle.

There is a great difference in quality and power of resistance between the armour plates of various periods. The old iron-clads had wrought-iron plates; but about 1879 steel-faced or "compound" armour was introduced, of which 3 inches might be considered equal to 4 inches of wrought-iron. A further improvement on this was steel armour, with its face hardened by the Harvey process, of which 2 inches were equal to 4 inches of wrought-iron.



THE PROGRESS OF ARMOUR, 1869-1908  
The diagram shows equivalent thicknesses of the various kinds of armour in use at the various dates: thus 6 inches of Krupp steel is about equal in resistance to 9 inches of Harvey and 18 inches of wrought iron.

The Harvey process toughens and hardens the face of the steel plate, till it becomes very difficult for any projectile to penetrate it. After this came a further improvement, nickel and steel alloyed being employed instead of ordinary steel, and then hardened on the Harvey plan. Then Krupp yet further improved the Harvey system of hardening, so that 6 inches of Krupp steel is equal in resisting power to 9 inches of the older Harvey. This Krupp armour is found in our *Queen*, *King Edward* and similar classes. The best Krupp plates now in existence are, in their power to exclude shot, equal to over three times their thickness of wrought-iron. The progress in armour is represented in a diagram, and a section showing the advance in recent Simpson armour is also given.

If we compare the old sailing ship of the line, which was our battleship at the date of Queen Victoria's accession, the early steam three-decker, the modern *Queen*, and the *Téméraire*, we shall see how fast we have travelled. As type of the first we take the *St. Vincent*, of 120 guns, the flagship of the



THE NAVY LEAGUE TRAINING BRIG AT WINDSOR.

Photo kindly taken and presented to the Navy League by Messrs. Hills & Saunders, Esq.

of stokers. These men are entered from 18 to 23, and in exceptional cases up to 25 years of age. They are entered in two ways, for continuous service, when they start at 11s. 8d. per week and free rations, and go on to 38s. 6d. as a chief stoker of 12 years' service; or as special service men, when they start at 9s. 11d. and free rations, and go on to 12s. 10d., having a free suit given them on joining. In most cases they must be men of very good character. A limited number of stokers who show special ability may be rated mechanics, when they rise from 31s. 6d. to 45s. 0d. Extra pay is given when serving in torpedo boats and destroyers and when in the Tropics.

Engine room artificers are entered as chief petty officers with pay of 38s. 6d. a week and a free ration, and rising to 45s. 6d. at 12 years' service, and they can rise to warrant officers; after examination their pay then ranges from £155 to £191, in addition to charge pay and with pensions of about £115. But besides these men, there are on board, the Royal Marines, both artillery and infantry; entered from 17 to 23 at Eastney and at Deal. About one-half the corps are serving afloat at a time. After some fifteen months' training in barracks a marine is available for sea service. After serving afloat he always returns to his depot to re-qualify. It is always a most popular corps, and never has any difficulty in recruiting to full strength. The men are a fine set of men imbued with the *esprit de corps* of their splendid services, and the Navy are very proud of them, whereas the Army would always be glad of their help, with the

varied qualifications of the handiness and resourcefulness of the seaman and the discipline of the stricter barrack life. Still we have other ratings: carpenters, blacksmiths, plumbers, armourers, electricians, ship's stewards, writers, bandmen, cooks and domestics. Each has his special use, and in this the most complicated piece of machinery known to the world—a fighting ship—cannot be dispensed with.

With all the attractions of a sea life in the Royal Navy it is a wonder that any boy prefers a life on shore. For granted that he is physically fit, healthy and ambitious, he not only sees a great deal of the world, but he has a chance of distinguishing himself by his bravery and zeal. He gets constant employment at a good rate of pay, free rations, free kit or allowance towards outfit, leave without loss of pay, extra pay for special services, and life pensions to those who serve twenty-two years. There is no other service which offers the same advantages as the Royal Navy, promotions being exceptionally rapid in the case of well conducted, intelligent men who are determined to get on. The King's Regulations and Admiralty instructions contain the terms and conditions under which men and boys accept service in the Royal Navy. All except special service men enter for twelve years' continuous service; if of good character and specially recommended they may be permitted to re-engage to complete time for pension, and at the expiration of twenty-two years' service they can take their pensions for life. Special service men serve in the Fleet for five years, followed by seven years in the Royal Fleet Reserve



## THE PROPOSED FORTH AND CLYDE CANAL.

BY BENEDICT W. GINSEURG.

THE Pentland Firth has been a proverbially dangerous place ever since the days when the scattered forces of what was the Invincible Armada fled northwards before the British Fleet, though the risks to navigation have been very much minimised by the introduction of steam, and by modern methods of ship construction (to say nothing of such inventions as those of the late Lord Kelvin), the rocky coasts of northern Scotland still have their dangers. One can see, therefore, that there is a certain fascination in the project which is now put forward for avoiding the north about passage. Some little time ago there was put forward under very distinguished auspices a scheme for the cutting of a practical waterway between the Forth and the Clyde. There is now in existence a barge canal thirty-nine miles in length which was designed by the famous engineer, Smeaton, and built in the years 1768-1790. It, however, only has a depth of 10 feet, and rises in its course to a height of 156 feet above sea level. It is now proposed to build a real ship canal which would take the largest class of warships, either existing or in contemplation. Two routes have been suggested as feasible, besides that of enlarging the existing waterway. Of these alternative schemes, one runs from Clydebank on the River Clyde to Carron, near Rosyth. This would have altogether twelve locks. The other would make use of Loch Lomond as part of its waterway. There is a difficulty here, however, in the fact that it has to traverse high ground, and at one time it was thought that the adoption of this route would involve the construction of a tunnel 150 feet high and 2½ miles long, but the idea of an open cutting has since been substituted for the tunnel. The length by this route would not be far short of seventy miles. The cost is put down at something like 20 millions sterling.

In regard to such schemes as these, one has to look at the proposals from two rather diverse standpoints; one is commercial and the other the naval aspect. In regard to the first, one asks how far such a canal can be expected to make a return on the capital embarked in it, and in regard to the other, one is concerned, not with the financial, but with the military question. It seems unlikely that such a canal as this would pay in any commercial sense. Though the Suez Canal is a monument of a successful commercial enterprise, the distance which that waterway saves to the steamers using it is measured by thousands of miles, and that on some of the main arteries of traffic. Here, the economy in distance would be measured merely by hundreds of miles, and for that reason it is obvious that the maximum tariff open to the promoter would be limited by the measure of the advantage to be gained by its customers. On the military side, however, it might well be that the canal would be an unmixed advantage. It would bring the new dockyard at Rosyth into direct touch with the enormous shipbuilding and repairing resources of the

Clyde, and, at the same time, prevent a hostile force from blocking the ships lying in that part by the obstruction of the entrance to the Forth.

It is, of course, impossible that such a scheme as this, if its advantages are entirely of a strategic nature, should be carried out by private enterprise, and the suggestion is that the Government should undertake the work, or at least guarantee the return on the capital required by the promoters. The whole scheme is very comparable with that of the Kaiser Wilhelm Canal which Germany has built to connect her arsenal and dockyard of Kiel with her North Sea coasts, and useful lessons can probably be drawn from the study of the inception of that great undertaking.



## THE ROYAL NAVAL VOLUNTEER RESERVE.

BY COMMANDER THE MARQUIS OF GRAHAM, C.V.O., R.N.V.R.

IN reviewing a magnificent fleet, one cannot but think of what great importance is the manning of the vessels. It is of no use having modern ships, great guns, expensive outfit, and many etceteras, if men—and the best of men—are not also available in sufficient numbers.

Navy *personnel*, therefore, is a matter of primary consideration, and great attention has been bestowed upon it. To maintain all the ships of the British Navy at their full fighting



ROYAL NAVAL VOLUNTEER RESERVE IN BATTERY.



THE LANCASHIRE NAVY LEAGUE SEA-TRAINING HOME AT LISCARD.

complement, and also provide a full reserve of men permanently serving on the Active List, would be far too costly for this country or, indeed, for any other. And so a balance has to be struck. Enough men fully to man the ships of the fighting line, and to fill the important and responsible positions on the vessels in reserve, are provided for in the Active List of the Navy. The outstanding portion of the complements of the ships in reserve is made up by men drawn likewise from auxiliary sources. \*There are several of these sources :—

- I. The Fleet Reserve, composed of men who have passed by short service through the Navy ;
- II. The Coast Guard ;
- III. The Royal Naval Reserve, a force of seamen from the Mercantile Marine ; and
- IV. The Royal Naval Volunteer Reserve, recruited entirely from amongst civilians with a predilection or aptitude for the sea.

The Territorial Force demonstrates the patriotism and inclination of many citizens to train themselves efficiently in the profession of arms. For these recognise that the surest way to maintain peace is to be prepared for war. The Territorial Force merely embraces those who are ready to serve on land ; and, as a maritime nation, it is natural that real love of, and aptitude for the sea should be deeply instilled in the fibre of large numbers of our people. Not to train their services, also, to meet naval requirements would be to waste a vast quantity of national energy which, on occasion, might be turned to great utility.

Witness the Spanish-American War. There was a nation of 75,000,000 people possessing a Fleet with a *personnel* of only 12,500 men. When war was declared the States Militias were called out and Volunteers asked for, and by their aid the numbers of men for the American Fleet were raised to 24,123, or practically doubled. It is unnecessary to detail the success of the American Naval operations ; but it is obvious that the victorious issue was largely due to the enrolled civilians, for without their aid the American Fleet could not have gone to sea, much less kept there—as it did.

Should Great Britain ever be engaged in a Naval war, it is certain that every trained naval seaman will be required and others besides, to perform the innumerable auxiliary services which fighting entails. It is consequently essential that we should co-ordinate, harness, and train all the elements that might be of the slightest use to our Navy.

The Royal Naval Volunteer Reserve makes an effort at this. It is organised in six divisions, and these are termed the London, Clyde, Mersey, Tyneside, Sussex, and Bristol Division respectively. Each force is composed of men who, though not professional sailors, have an insight into seafaring ways or are adapted by reason of their daily callings to render skilled service on board men-o'-war. As an instance, it may be mentioned that in one division alone there are :—

- 17 Mechanics.
- 19 Blacksmiths.
- 31 Plumbers.
- 103 Carpenters.



TURBINE TORPEDO BOAT, FORMERLY CALLED "COASTAL DESTROYER."

- |     |                         |
|-----|-------------------------|
|     | Riveters.               |
|     | Platers.                |
| 84  | Iron Turners.           |
|     | Iron Moulders.          |
|     | Sheet Iron Workers.     |
|     | Pattern-makers.         |
| 10  | Electricians.           |
| 145 | Engine Room Artificers. |
| 9   | Telegraphists.          |

All Naval Volunteers pass through a thorough annual training in their Drill Batteries, and have to perform not less than 24 drills as a minimum. A large number of men perform over 200 drills, which is ample proof of their zeal. In addition to Battery drill, they go through "Short Courses" at the Naval Gunnery, Torpedo, Engineering, and Signalling Schools, as also periodical embarkations in the most modern vessels of H.M. Fleet. All this training means hard work, but it is necessary, and spells *efficiency*. Without it, it would not be possible for civilians to acquire technical knowledge of the

latest modern weapons, or to understand the ways of ship routine in a Fleet at sea.

Amongst our teeming industrial population, there is plenty of material from which to raise a valuable reserve for the Navy. The spirit of the people is willing, but more practical use of the time given is required. Sea work—ship life—naval practice—is what the Volunteers require to round off their Battery training. Civilians cannot afford frequently to spend a fortnight or a month away from home and work, and yet this is all the opportunity they now get to learn real practical Naval training. A Gunboat should be placed at the disposal of each Division for practical work at sea in the Summer-time, and this to be commissioned by the Volunteers themselves as often as may prove convenient. Work in the Gunboat would not be in place of Fleet embarkation, but supplementary to it.

Enough has been said to show the utility and the prospects of the R.N.V.R. A "call to arms" can alone prove its efficiency. But if generosity, patience and hard work form any criterion of success, the nation ought not to experience failure at the hands of the officers and men of the Naval Volunteers.





ADMIRAL MAY.

(Photo, *Mail's* 1905.)

SIR WILLIAM HENRY MAY, K.C.B., K.C.V.O., who is in supreme command of this fleet, was born in July, 1849, and entered the Navy in June, 1863. He became commander in 1881, captain in 1887, and obtained flag rank in March, 1901, becoming vice-admiral in July, 1905. He served in the Arctic expedition in 1875-6, for which he had the Arctic medal. In 1887 he invented a device for discharging torpedoes from on board ship. He was authorised by the Admiralty in 1888 when in command of H.M. belted cruiser *Impérieuse* to annex Christmas Island. He became naval attaché in 1891-3, assistant-director of torpedoes in 1893-5, and chief of the staff of the Mediterranean station from the beginning of 1895 to the end of 1906. He was made a member of the Victorian Order in commemoration of Her late Majesty's Diamond Jubilee; aide-de-camp to the Queen in 1899, and received the Red Eagle from the German Emperor in 1900 and was made a Knight of the Legion of Honour in 1905. He was Lord Commissioner of the Admiralty and Controller of the Navy in 1901; he went afloat again however four years later, being appointed to the command of the Atlantic Fleet and hoisting his flag on board H.M.S. *King Edward VII.* on the 7th February, 1905. He is a K.C.B., 22 June, 1906.

SIR ARCHIBALD BERKELEY MILNE, Bart., K.C.V.O., the second in command, was born in June, 1855, and entered the Royal Navy in April, 1869, becoming commander in September, 1888, from the Royal Yacht, captain in 1891 and rear-admiral in April, 1904. He is an extra equerry to the King and groom-in-waiting to His Majesty. He has the fourth class of the Medjidie and three first-class certificates.

He was lieutenant of H.M.S. *Active* during the old Colony and Zulu wars, landing with the Naval Brigade in November, 1878, and being appointed aide-de-camp to Lord Chelmsford. He was present at the capture of Uirayo's stronghold in January, 1879, and with No. 3 column when it retired on Isandhlwana and Rorke's Drift on the 22nd and 23rd January. He was present at the battle of Gingihlovo and at the relief of Ekowe. He was wounded at the battle of Ulundi on the 4th July, 1879, and was mentioned in the Naval and Military Dispatches, receiving the Zulu medal and clasp. During the Egyptian war he was flag-lieutenant to Admiral Hoskins in H.M.S. *Penelope*, and received the Egyptian medal, the Khedive's bronze medal and the Medjidie of the fourth class.

From November, 1889, till December, 1901, he was in command of the then Prince of Wales' Royal Yacht *Osborne*, and by special wish of the Prince he remained in command of her as captain till he became a commodore of the second class at Portsmouth in April, 1903. He is naval aide-de-camp to the King, obtained the K.C.V.O. in July, 1904, and the second class order of the Crown and Star was given him by the German Emperor in January, 1905.



ADMIRAL MILNE.



(Photo, Arthur Wilson Poultry.

THE RIGHT HON. THE LORD MAYOR.

## THE CHIEF HOST TO THE FLEET.

It must be remembered that the present occasion is not, as most assemblages of the Fleet have hitherto been, a Review, but is simply a visit to the Thames by His Majesty's Fleet to give the citizens of London and others an opportunity of seeing something of the ships of the British Navy. It is a visit of the Fleet, and the hosts are the Lord Mayor and Corporation of the City of London. We, therefore, give a photograph of the Lord Mayor of London, Alderman Sir George Wyatt Truscott, who is the principal host on this occasion. He is intimately connected with the life of the City of London, being a Director of several limited Companies, a member of four of the City's ancient Guilds, and Chairman of a great firm of printers. He has been a member of the Corporation of London since 1882. He is also a prominent Freemason.

## LIST OF FLAG OFFICERS IN COMMAND OF THE SQUADRONS VISITING THE THAMES.

### HOME FLEET—

#### First Battle Squadron—

FLAGSHIP.

Admiral Sir W. H. MAY,  
K.C.B., K.C.V.O. ... *Dreadnought.*  
Rear-Admiral C. J. BRIGGS ... *Lord Nelson.*

#### First Cruiser Squadron—

Rear-Admiral Hon. S. C. J.  
COLVILLE, C.V.O., C.B. ... *Drake.*

#### Second Battle Squadron—

##### Second Division—

Vice-Admiral Sir A. B.  
MILNE, Bart., K.C.V.O. ... *King Edward VII.*

#### Second Cruiser Squadron—

Rear-Admiral J. STARTIN ... *Hibernia.*  
Rear-Admiral R. S. LOWRY ... *Shannon.*

### Fourth Cruiser Squadron—

Rear-Admiral A. M. FARQUHAR,  
C.V.O. ... *Leviathan.*

### ATLANTIC FLEET—

#### Battle Squadron—

Vice-Admiral PRINCE LOUIS  
OF BATTENBERG, G.C.B.,  
G.C.V.O., K.C.M.G. ... *Prince of Wales.*  
Rear-Admiral W. B. FISHER,  
C.B. ... *Albemarle.*

#### Fifth Cruiser Squadron—

Rear-Admiral F. T.  
HAMILTON, C.V.O. ... *Good Hope.*

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## THE KING ON READINESS FOR WAR.

At Liverpool, on the 7th July, 1900, His Majesty The King said that: "readiness for defence is the strongest of the safeguards of Peace."

## THE NAVAL VISIT TO THE THAMES.

PROGRAMME of entertainments for the visit of the First and Second Divisions of the Home Fleet, the Atlantic Fleet, and the Fourth Cruiser Squadron to the Thames :—

July 17.—The Fleet will arrive off Southend at 1.30 p.m.; the Port of London authorities will arrive in the *Conservator* to call on the Commander-in-Chief, Home Fleet, at 3 p.m.

July 20.—The Admiralty yacht *Enchantress* will arrive at Southend with the Lords of the Admiralty at noon; the Lord Mayor of London and his guests will embark from Southend Pier in the tug *Robust* at 12.30 p.m. and will go to the *Enchantress* for luncheon. The Admiralty flag will be broken in the *Enchantress* on the Lord Mayor's going on board, and the Fleet will dress ship and fire a salute. The *Robust*, with the Lord Mayor and party, will leave the *Enchantress* to steam round the Fleet at 2.15 p.m. The *Enchantress*, with the Lords of the Admiralty, will leave for Queenborough at 2.30. The Lord Mayor and party will arrive alongside the *Dreadnought* at 3.15; the City Corporation and about 600 guests will arrive at Southend Pier from London and embark in tugs, one party going to the *Bellerophon* and another party to the *Téméraire*, at 3.30. The Lord Mayor and party will leave the *Dreadnought* at 4.30 and will return to London by train from Southend at 5.10 p.m. The City Corporation and party will leave the *Bellerophon* and the *Téméraire* at 4.30.

July 21.—Forty officers and 1,200 men, with six field guns, will go to London for entertainment by the Lord Mayor at 9.45 a.m.; 550 men will land for entertainment by the mayor of Southend at 4 p.m., dispersing after tea as liberty men. The mayor of Southend will entertain the Commander-in-Chief, flag officers, and officers (130 in all) at dinner at 8 p.m.

At the entertainment in London, each sailor will receive a souvenir medal and a case containing a briar pipe, cigars, cigarettes and matches. Smoking will be allowed after the luncheon, whilst a variety entertainment, to which many leading music hall artistes will contribute, is in progress. The ladies of the Reception Committee and others will witness the march past of the sailors from the Mansion House balcony.

July 22.—Five hundred commissioned officers will leave Southend at 11.30 by special train for London to lunch with the Lord Mayor. A distinguished company of representative citizens will be asked to this Admirals' and officers' luncheon, but the speeches will be confined to the proposal of the toast of the officers by the Lord

Mayor and to Sir William May's speech in reply. The Fleet will be illuminated at 9.30 p.m.

July 23.—The mayor and corporation of Southend will visit the *Dreadnought* and will be entertained at tea by the Commander-in-Chief, Home Fleet.

July 24.—The Fleet will leave Southend.

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## REGULATIONS OF THE COMMANDER-IN-CHIEF

AS TO

### THE NAVAL VISIT TO THE THAMES.

WE have received from the Admiralty a copy of the regulations of the Commander-in-Chief for visitors to the Fleet at Southend. They are as follows :—

1. Ships of the Home Fleet at Southend will be open to visitors at the following times :—

Sunday, July 18, 2 p.m. to 6 p.m.

Monday, July 19, 9.30 a.m. to 11.30 a.m., and 2 p.m. to 6 p.m.

Wednesday, July 21, 2 p.m. to 6 p.m.

Thursday, July 22, 9.30 a.m. to 11.30 a.m., and 2 p.m. to 6 p.m.

Friday, July 23, 2 p.m. to 6 p.m.

Ships will not be open to visitors on Tuesday, July 20. The *Dreadnought* will be open to visitors only on the afternoons of Sunday, July 18, Wednesday, July 21, and Thursday, July 22, from 2 p.m. till 6 p.m., and not at any other time.

2. Not more than one steamer at a time will be allowed alongside a man-of-war, and no attempt should be made by a steamer to go alongside when another vessel is lying there.

3. Steamers, having discharged their visitors into a man-of-war, are to remain alongside until all passengers have been re-embarked, unless permission to leave is obtained from the man-of-war.

4. Whenever the commanding officer of a man-of-war considers that there are sufficient visitors on board his ship, he will cause a large red flag to be hoisted at the masthead, and while this flag is flying no steamer or other craft shall attempt to come alongside.

5. Should any vessel fail to comply with these regulations their names will be made known to the Fleet, and the commanding officers may refuse such vessels leave to discharge their passengers into the man-of-war, then or at any future time during the visit of the Fleet.





ATTACK ON WHALE ISLAND.

[Photo, Credit.]

## THE IMPERIAL PRESS DELEGATES AND THE ATTACK ON WHALE ISLAND.

THE summer of 1909 will have seen a wonderful display of British Sea Power. First there was the visit of the delegates to the Imperial Press Conference to Portsmouth on June 12, when they inspected the Fleet at Spithead. Though no ships were specially commissioned for the occasion, there were present 27 battleships, 12 armoured cruisers, 10 protected cruisers, 9 auxiliary vessels, 48 torpedo-boat destroyers, and 35 submarines, the Fleet aggregating 771,200 tons displacement, carrying 1,852 guns, and being manned by 40,000 officers and men. It is said that the aggregate cost of the vessels when new was 90 millions sterling, and all this assemblage was got together without specially commissioning a single ship. Though the delegates were very much impressed by the power displayed, they were fully sensible of the fact that, however great our strength may be at the moment, it is necessary that adequate steps should be taken to provide for the maintenance of our relative strength in comparison with that of other nations. After inspecting the Fleet, the guests were received on board the *Dreadnought*, where they witnessed the passing of a number of submarines, which kept their stations as accurately as would battleships or cruisers; and subsequently saw an attack on the vessel on which they stood, by torpedoes discharged by destroyers, steaming past at 18 knots. After thoroughly inspecting the arrangements of the *Dreadnought*, the visitors were conveyed to Whale Island, where they saw a spirited and

realistic sham fight, the island being invaded by a landing party from several gunboats, and being repelled by the garrison with field guns and an armoured train.

Then followed the manoeuvres, for which 10 battleships, 10 armoured cruisers, 22 protected cruisers, 59 torpedo boat destroyers, 50 torpedo boats, 7 gun boats, 11 auxiliaries and 4 scouts, were specially mobilized. Then comes this visit of the Fleet to the Thames, whilst finally His Majesty The King is to review the Fleet at Spithead on the last day of July.



## REGULATIONS FOR VISITORS TO THE TORPEDO CRAFT.

To be moored in the Thames above the Tower Bridge from Sunday, July 18th, to Friday, July 23rd, inclusive:—

The *Hazard*, torpedo-boats, and destroyers will be open to the public daily from 9.30 a.m. to 11.30 a.m. (weekdays only), and from 2.30 p.m. to 6 p.m. (Sunday and weekdays). If, in the opinion of the commanding officer, it is desirable that no more visitors should come on board, a large red flag will be hoisted at the masthead, and when this flag is flying no one is to attempt to come on board.

Submarines will not be open to the public.

## THE DEVELOPMENT OF BATTLESHIPS.

Name of Ship.	Year Completed.	Total Cost.	Displacement.	Guns in Principal Armament.		Description.	Crew.
				I.H.P.	No.		
<i>Victory</i> ... ..	1765	£55,000	2,164*	—	102	32 pr. M.L. ... ..	—
<i>Warrior</i> ... ..	1861	357,000	9,210	5,270	4	8-inch 9-ton M.L. ...	700
<i>Bellerophon</i> ... ..	1866	323,000	7,550	6,520	10	8-inch 14-ton M.L. ...	565
<i>Thunderer</i> ... ..	1877	443,000	9,330	7,000	4	10-inch 29-ton M.L. ...	400
<i>Anson</i> ... ..	1889	725,000	10,600	11,500	4	13½-inch 67-ton B.L. ...	515
<i>Royal Sovereign</i> ... ..	1892	839,000	14,150	13,000	4	13½-inch 67-ton B.L. ...	712
<i>Implacable</i> ... ..	1901	989,000	15,000	15,000	4	12-inch B.L. ... ..	780
<i>King Edward VII.</i> ... ..	1905	1,473,000	16,350	18,000	4	12-inch B.L. ... ..	777
<i>Dreadnought</i> ... ..	1906	1,813,000	17,900	27,500	10	12-inch B.L. ... ..	800

\* Burden.

When used as flagships, there is an addition of about 30 men to the complement.

## THE TONNAGE, HORSE-POWER, AND NUMBER OF LARGER GUNS ABOARD THE BATTLESHIPS AND CRUISERS VISITING THE THAMES.

	Displacement of ship.	Displacement of group.	I.H.P. of ship.	I.H.P. of group.	12-inch guns of ship.	12-inch guns of group.	9-2-inch guns of ship.	9-2-inch guns of group.	7-2-inch guns of ship.	7-2-inch guns of group.	6-inch guns of ship.	6-inch guns of group.	Crew of ship.	Crew of group.
<b>24 BATTLESHIPS.</b>														
3 Bellerophons ...	18,600	55,800	27,500	82,500	10	30	—	—	—	—	—	—	850	2,550
1 Dreadnought ...	18,000	18,000	27,500	27,500	10	10	—	—	—	—	—	—	800	800
2 Agamemnons ...	16,500	33,000	17,000	34,000	4	8	10	20	—	—	—	—	800	1,600
8 King Edwards ...	16,350	130,800	18,000	144,000	4	32	4	32	—	—	10	80	777	6,216
3 Albemarle ...	14,000	42,000	18,000	54,000	4	12	—	—	—	—	12	36	750	2,250
6 Formidables ...	15,000	90,000	15,000	90,000	4	24	—	—	—	—	12	72	780	4,680
1 Albion ... ..	12,900	12,900	13,500	13,500	4	4	—	—	—	—	12	12	750	750
	—	384,500	—	445,500	—	120	—	52	—	—	—	200	—	18,846
<b>15 ARMOURD CRUISERS.</b>														
3 Indomitables ...	17,250	51,750	41,000	123,000	8	24	—	—	—	—	—	—	(800)	(2,400)
2 Shannons ... ..	14,600	29,200	27,000	54,000	—	—	4	8	10	20	—	—	755	1,510
3 Warriors ... ..	13,660	40,980	23,500	70,500	—	—	6	18	4	12	—	—	704	2,112
1 Duke of Edinburgh	13,660	13,660	23,500	23,500	—	—	6	6	—	—	10	10	704	704
3 Good Hopes ... ..	14,100	42,300	30,000	90,000	—	—	2	6	—	—	16	48	900	2,700
2 Berwicks ... ..	9,800	19,600	22,000	44,000	—	—	—	—	—	—	14	28	700	1,400
1 Argyll ... ..	10,850	10,850	21,000	21,000	—	—	—	—	4	4	6	6	655	655
	—	208,340	—	326,000	8	24	—	38	—	36	—	92	—	11,481
<b>4 PROTECTED CRUISERS.</b>														
1 Arrogant ... ..	5,750	5,750	10,000	10,000	—	—	—	—	—	—	11	11	450	450
2 Blakes ... ..	9,000	18,000	13,000	26,000	—	—	—	—	—	—	4	8	500	1,180
1 Sapphire ... ..	3,000	3,000	7,000	7,000	—	—	—	—	—	—	—	—	200	200
	—	26,750	—	43,000	—	—	—	—	—	—	—	14	—	1,920

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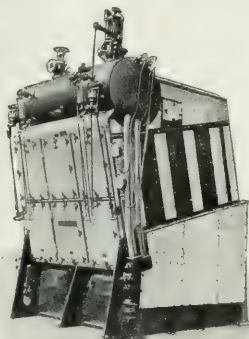
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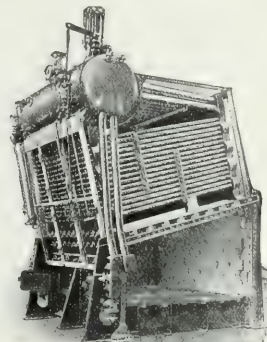
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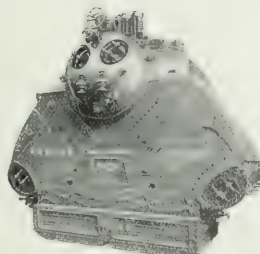
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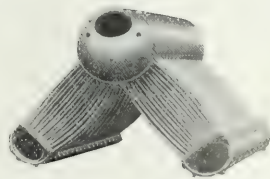
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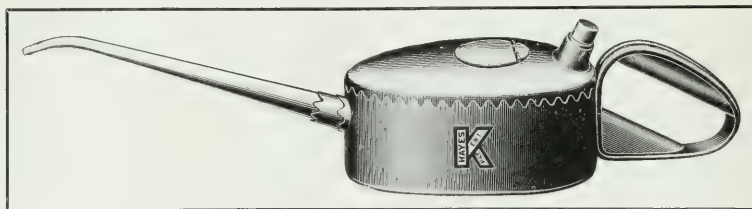
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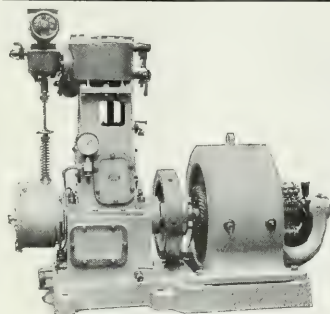
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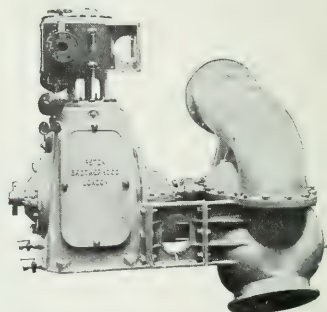
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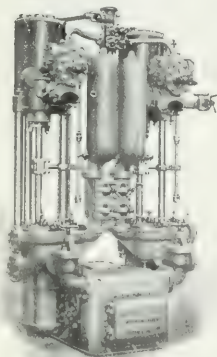
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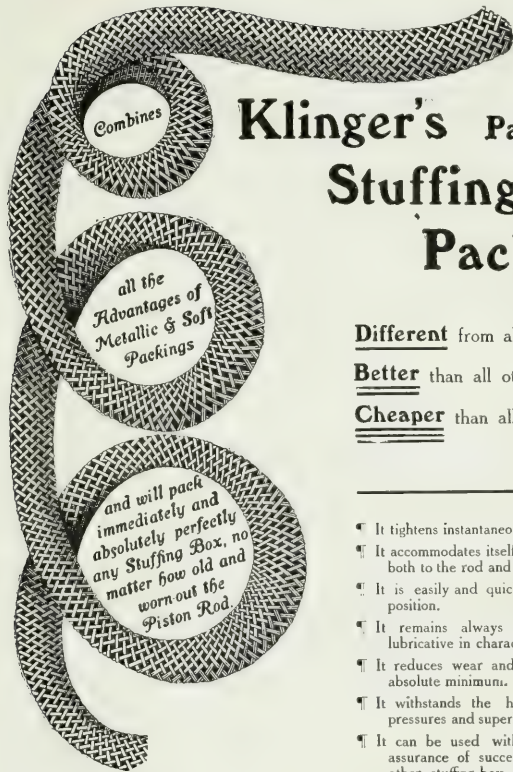
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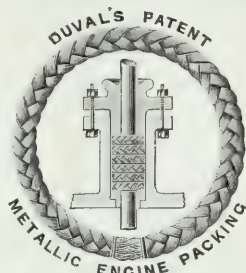
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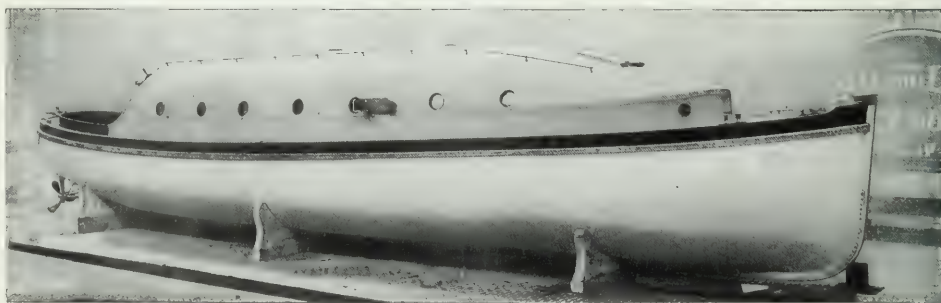
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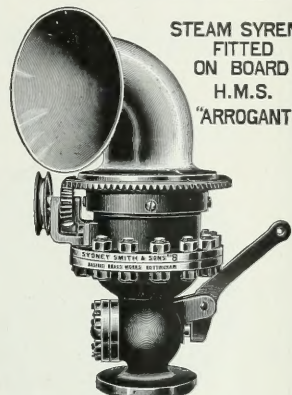
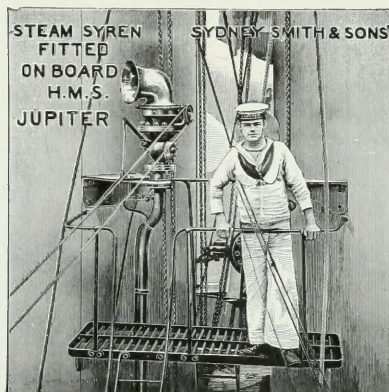
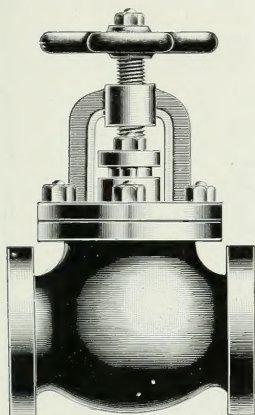
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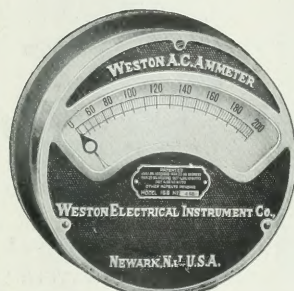
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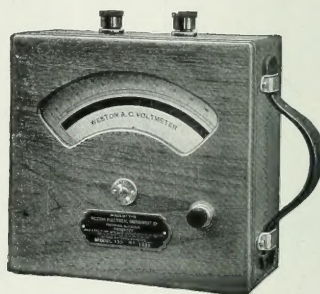
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